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SANITARY,

METEOROLOGICAL AND MORTUARY REPORT

OF THE

Philadelphia County Medical Society,

FOR 1855:

WITH AN ACCOUNT OF THE

PREVALENT DISEASES

IN THE

CONSOLIDATED CITY DURING THE YEAR;

ACCOMPANIED WITH A GEOLOGICAL CHART OF THE COUNTY.

Presented to the State Society at its Annual Session, held in Philada. May, 1856.

BY

WILSON JEWELL, M. D.,

CHAIRMAN OF THE COMMITTEE ON EPIDEMICS; MEMBER OF THE BOARD OF HEALTH, ETC.

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REPORT.

In compliance with a resolution of the State Medical Society, adopted at its last annual session, your Committee on Meteorology and Epidemics have endeavored, as far as practicable, to conform to the terms contained in the recommendation of the parent society.

The information solicited is embraced under three general heads :—

1. Causes which modify the health of the county.
2. Mortuary tables.
3. Prevalent diseases.

These topics are abundantly comprehensive; and adhering to this order of arrangement, we proceed to furnish, under the first head, some of those natural and artificial agencies, which are entitled to our consideration, as having a direct bearing upon the health of Philadelphia.

This is an important inquiry, involving not only the sanitary condition of our city, but also its geographical relations, its size, population and municipal regulations; as well as its geological position and its meteorological states, during the year—all of which we shall present under the head of

I. MEDICAL TOPOGRAPHY.

Locality.—The city of Philadelphia lies on the eastern extreme of the State, in 39° 57′ N. latitude, and 75° 10′ W. longitude, being 1° 54′ or 136 miles N. E. of Washington City, and 87 miles S. W. of New York. Since the organization of the city in July, 1853, under the act of consolidation, passed by the legislature, and approved February 2d of the same year, its limits are made co-extensive with those of the entire county, and it now contains an area of 120 square miles, with a population, from the best evidence that can be obtained, exceeding 500,000 souls.

The boundaries of the city are as follows : on the north Bucks County; on the west Montgomery and Delaware Counties; on the south Delaware County, and on the east the Delaware River.

The Schuylkill River winds its course nearly through the centre from northwest to southeast, and empties into the Delaware about four miles

below the business section of the city. The approach to Philadelphia looking towards the western shore, from the Delaware River, which is less than ¾ of a mile wide, and which stream borders its entire eastern front, presents only a moderate elevation to the eye, but rises, as it extends to the west and northwest, to a considerable elevation.

The compact, or closely built portions, embrace a peninsula, about two miles wide between the two rivers, but widening as it extends in a northerly direction. On the Delaware front, this section of the city is about five miles in length; stretching from the navy yard on the south, to Richmond on the north, and at its western extremity, in the same direction on the Schuylkill, a distance of more than two miles.

Beyond this densely populated locality, we have large suburban districts, comprising the chief portion of the territory, embracing in their wide extent, numerous manufactories, surrounded by the residences of industrious and enterprising workmen; several beautiful villas, the whole interspersed, in almost every direction, with tasteful cottages, environed by richly ornamented and handsomely laid out grounds. Many of these delightful residences are occupied the year round, by merchants and others, doing business in the city; while others, again, form the summer retreat for families who for the health of their children especially, would escape the heated atmosphere of our crowded metropolis.

The river Delaware opposite the city is navigable for vessels of the largest tonnage, and forms a good and safe harbor for shipping to any amount. The tide rises and falls on an average about six feet perpendicularly. During a long continuance of northerly winds, or at the time of the spring tides, it occasionally reaches a height of from seven to nine feet, overflowing many of the wharves, and flooding cellars along the avenue. The current of the river is by no means rapid. Its ordinary rate being from two and a-half to four miles an hour. The tide runs up seven, and down, five hours. The water is fresh, and does not become brackish for thirty miles below the city. The city is 103 miles by the natural channel from the ocean, and 40 from the bay. In a direct line eastward it is not more than 55 miles from the Atlantic.

The Schuylkill River, which rises in the carboniferous regions of Schuylkill Co., flows by the western extreme of the peninsula of the city, where it is about half a mile wide, and pursuing a serpentine course, intersects with the former river, about five miles by its natural channel below. The borders of this stream, both opposite and below the city, except where they have been improved by wharves, present the character of a marsh in many places, over which the tide, flowing and receding, leaves an extensively exposed muddy surface, which gives rise to malarial exhalations.

Geological Structure.—Our county belongs to the primitive formation. That portion of the isthmus on which the city is built is covered by diluvium, consisting of sand and gravel; overlaid for the most part with a thick argillaceous crust of various hues, the whole resting on a primitive base, from 40 to 50 feet below the surface. The marine deposits found at various periods below the natural surface, prove conclusively, that this isthmus was at one time covered by the sea.

In the vicinity of Fairmount and extending along the Schuylkill on both sides north, for several miles, in many places the *gneiss* and its associated formations, which may be seen projecting above the diluvium, are capable of being quarried, and afford a large amount of gray stone for building and other purposes.

At the Falls of Schuylkill, there is a vein of granite mixed with *red feldspar*. In the vicinity of the Wissahiccon, *garnets* are to be found. Here begins the *mica slate* formation, where may be seen *staurotide*, *syenite*, and *red oxide of titanium*. At Manayunk, the mica is predominant, and abounds as far up as the soapstone quarries. The *steatite* or soapstone formation, crosses the Schuylkill a mile and a half above Flat-rock bridge. It includes two bands, that on the south consisting of *steatite* and *talc*, imbedding knots of dark *serpentine*, while the other on the north, is also a variety of serpentine, holding crystals of *hornblende* in its composition.

This steatitic rock shows itself first near the foot of Chestnut-Hill, east of the turnpike and increasing in width, it crosses the Wissahiccon on the west, in which locality it is well exposed. Here is to be seen in abundance, *green mica*, *talc*, *dolomite* and *serpentine*, along with *steatite*.

The subordinate, or associated formations of the *gneiss*, are the *diabase*, the *pregmatite*, the *feldspar*, *kaolin* and the *eurite*, or white stone of Werner. The *gneiss*, in which *feldspar* predominates, and which is intersected by veins of *pregmatite*, is abundant in the vicinity of Germantown. The boulders in this neighborhood are of granite formation, and contain intermixtures of *beryl* and *tourmaline*. The *eurite* exists here, but only in narrow bands or veins, and may be seen also between Frankford and the city proper, in a *gneiss*, passing into *diabase*.

After passing Fairmount, the *amphibole* appears in a mixed rock of feldspar and black mica. Of this structure, running into diabase, there are several quarries hereabouts. This granitic rock is used for turnpike roads, and causes the unpleasant ochrey dust during dry weather in the vicinity of the city. (*Troost.*)

In the neighborhood of Spring Mill, the primitive clay slate forma-

tion commences. Here, also, have been found beds of brown ironstone passing into brown *hematite.* These clay slate rocks, containing masses of earthy chlorite and much quartz, continue to the termination of the county, in this direction, passing into a high ridge, separating the limestone valley from the granitic region. The *eurite* is also seen in this vicinity.

The *gneiss* loses itself to the southeast under the cover of diluvium; but at the northeastern end of the county, in Byberry township, 23d ward, the amphibolic rocks project above ground; here also is found mica slate.

Soil.—The soil of the county is produced partially by the decomposition of the primordial rocks.

That of Oxford township, 23d ward, is a stiff loam; the subsoil, a yellow loam bordering on clay; as it approaches the Delaware, it becomes light and sandy.

In Unincorporated Northern Liberties, or part of 23d ward, the soil is sandy near the river, but of a firm loam in the upper and western parts, and possesses a subsoil of clay for bricks and for potter's use. In the 16th, 17th, 18th, and 19th wards, the soil is similar.

Penn township, or the 20th and 21st wards, is very gravelly and sandy; has no good subsoil where the gneiss abounds, but where the amphibole predominates the soil improves, becoming a clayey loam.

Germantown, 22d ward, is in general of a stiff loam, resting on strata of gravel, which lies above the gneiss formation.

Lower Dublin, Byberry, and Moreland, have a soil loamy, but light and sandy in its nature, much varied with some sandy and barren spots. Along the bottom lands of the two latter, there exists a blue stiff loam.

In Roxborough, in 21st ward, the soil is generally of a light formation of loam, the subsoil resting on the serpentine and soapstone rocks.

Throughout Blockley, 24th ward, a sandy but occasionaly a stiff loam prevails.

Kingsessing township is of a light sandy loamy soil.

The city proper rests on an alluvial of clayey loam which covers beds of gravel. The lower section east of the Schuylkill called the "Neck," composed in part of Moyamensing and Passyunk townships, or 1st ward, possesses an alluvial of two kinds—marshy near the rivers Delaware and Schuylkill, and a sandy loam as you recede from them. There are no rocks visible in this section of the county.

The accompanying colored geological chart will exhibit the precise locations of the various mineral formations, and their relations to the varieties of soil in the county; all of which we have particularly designated.

Elevation.—The average elevation of the ground-plot, or that part laid out by Penn, is 40 feet, but ranges from 2 to 46 feet, while the

northwestern sections of our present extended metropolis reach an altitude from 1 to 200 feet above the level of the river. In this direction, it is interspersed with ridges and hills, many of which, as the improvements extend, are gradually yielding to the spirit of the age.

That portion of the extreme southern section of the city, along the banks of the Delaware and east of the Schuylkill, familiarly known as the "Neck," extending to the junction of the two rivers—is a low, flat, and in many places a marshy district. Here especially, have ever been and will continue to be found, fruitful causes for the production of autumnal fevers, until the whole district becomes improved. Those of an intermittent type most generally prevail, though malarial fevers of a more aggravated character have often been observed, and treated by those physicians who practice in that locality.

At present this neck of alluvial soil is covered with rich meadow land and luxuriant vegetable gardens, which well-nigh furnish the tables of the entire city, from their abundant and rich supply.

Water Supply.—Water may be readily obtained by digging in any and every part of the city, from 10 to 30 feet below the surface, according as the situation may be more or less remote from the river. Formerly, wells from these underground springs supplied the entire city with most excellent water. But, at length, the infiltration from various impurities, as the growth and compactness of the population increased, interfered with its purity and softness, until it was hardly fit for drinking purposes. Cisterns were at one time used, but these also, from the same cause, became infected, and, with the wells, were finally abandoned for a more wholesome and palatable supply.

At present, the more thickly inhabited districts are favored with a supply of excellent water, drawn up into reservoirs from the Schuylkill and Delaware Rivers by means of four admirably adapted works; these improvements add materially to the salubrity of our city.*

Each of these works varies both in size and power. When constructed they were sufficiently ample for the supply of those districts in which they are located, and for which they were originally designed. As the city extends, however, their capacity must be increased or others erected.

The Fairmount works supply the first ten wards of the consolidated city. The pumps attached thereto, if run twenty-four hours, will raise 13,901,184 gallons per day. The five reservoirs of these works will store, when filled, 47,218,028 standard gallons.

The Schuylkill works, three-quarters of a mile above Fairmount, which supply the 11th, 12th, 13th, 14th, 15th, 20th, and part of the

* Germantown is supplied by private works.

16th wards, are capable of raising 10,196,236 gallons per 24 hours. The storage for these works will hold 9,800,000 gallons.

The Delaware works, located on the Delaware River at Kensington, supply the 17th, 18th, 19th, and part of the 16th wards, will throw up 4,026,240 gallons in 24 hours, and the reservoir contains, when full, 9,284,000 gallons.

The fourth or 24th ward works, intended to supply the 24th ward, or West Philadelphia, Mantua, and parts adjacent, will raise 1,780,272 gallons in each 24 hours. These works have no basin for storage, but depend upon the volume contained in a stand-pipe 5 feet in diameter and 130 feet high.

The water from these several works is distributed through iron pipes of various sizes from 30 inches in diameter down to $1\frac{1}{2}$ inch bore, over a surface equal in extent to $242\frac{3}{16}$ths miles. From these public works it is again conducted through leaden pipes to private houses, factories, &c. (See *Report to Councils*, April, 1855, by F. Graff, Esq.)

The total amount of water pumped by the first three named works, during the year 1854, was 4,270,786,902 gallons, or 11,700,786 gallons per day. The highest average for any month was July, which allowed 46 gallons per day for each of the population residing in that part of the city supplied with water; or, according to the average per day throughout the year, it would give each inhabitant 35 gallons per day.

The cost of this supply to the city is about eleven dollars for each million of gallons.

The purity of our Schuylkill water, from which source the city receives its principal supply, has of late been a subject of investigation. Its high importance elicited from Councils, in 1854, a thorough examination of its qualities. The result shows, after a careful analysis by Messrs. Booth and Garrett, two experienced chemists, and by a comparison with those of Boye and Silliman in 1842 and 1845, that, while the quantity of organic matter in 1842 was capable of being determined, and that of 1845 quite large; in 1854 there was not an amount sufficient to admit of exact determination, notwithstanding the increase of manufacturing interests and of population, in the valley of the Schuylkill. Further, that the amount of mineral contents remains the same, varying only in its proportions. This very able chemical report concludes with the following highly gratifying opinion:—

"We may further observe, that a comparison of our waters with waters used elsewhere in the United States and in Europe, highly esteemed for their excellency, may be characterized by its greater purity, its slightly alkaline impregnation, and by being nearly free from organic matter. In conclusion, we infer that the Schuylkill water has deteriorated, in no important respects, from its former excellent quality—is superior to most

waters for domestic and manufacturing purposes; and lastly, a comparison of the past and present, leads to the inference, that no plan of improving the water will be required for many years to come."

As to the solid organic matter contained in our Schuylkill water, it is equally gratifying to learn from the report of Frederick Graff, Esq., the eminent superintendent of Fairmount Waterworks, from which the above opinion was extracted, that while the water of the Cochituate (used in Boston) contains 1.16 grs. of solid organic substances in one gallon, and the Croton (used in New York) contains 4.28 grs., and that, too, after it had passed through forty-one miles of aqueduct—the Schuylkill water, taken directly from the river, before it had entered into the reservoir, and had time to deposit its solid particles, contained but a trace of organic matter.

We may, therefore, with safety conclude, that we possess the advantage of a purer quality of water for drinking purposes than any other city in the United States, or perhaps the world over. A pre-requisite, as essential to the enjoyment of health as it is necessary for the preservation of life itself.

A more liberal system of water distribution, both for private and public purposes, would add signally not only to the cleanliness, but to the health of our city.

To the poor and laboring portions of the community, who of all others, suffer most from a restricted use of this great preserver of health, and who, in their contracted tenements and confined courts, require its sanitary properties, far more than the wealthier classes—there is a short-sighted policy adopted by our public authorities, as well as by landlords. They do not confer upon them, those privileges and benefits arising out of the free supply of water for their domestic and personal uses, which are enjoyed by their more fortunate neighbors. Few if any baths are to be found in the dwellings of the poor, and Schuylkill water for necessary domestic purposes of the family is, in the generality of court houses, an article in great demand, owing to its limited supply.

It only remains for us, therefore to suggest, that one of the most efficient means for public health in our city, would be, the more abundant use of water for public purposes, especially during the summer months, and in behalf of the poor, that an ordinance be passed, requiring landlords and owners of property to introduce the Schuylkill water into every house, however small, for the use of the tenants. The benefits arising out of a liberal system, such as we have suggested, would soon be made apparent in the removal of much domestic and personal filth, which is at all times a prominent cause of disease; and thus contribute to the moral as well as the physical improvement of the laboring classes in the community.

Another admirable sanitary improvement to our city, would be the erection of model bath-houses in several of the crowded districts, under the control of councils, and the cost for bathing fixed at a nominal charge. To the laboring classes, and to the poor at large, this feasible and commendable hygienic plan would prove a blessing and a comfort to thousands; be promotive of personal cleanliness and health, a judicious expenditure of the public funds, and in the end, a pecuniary saving to the corporation, by curtailing the amount of disease in our Blockley almshouse infirmary.

Against this suggestion it may be urged, that the supply furnished the city by her several works is not adequate for such extended improvements. This is not only the case, but we find in the last annual message of the mayor to councils, 1855, that the supply is inadequate for present use, and that the time has arrived for enlarging these works. In this extension, ample provision should be made for a supply, equal to the sanitary requirements of the city.

Drainage and Sewerage.—In close proximity to the subject of an ample supply of water for public purposes, as an important sanitary measure, we may place the means for draining, as well as for the sewerage of our city.

This system for accomplishing public cleanliness, when properly directed, has no equal; and that city without the facilities for its adoption, is what Bethnal Green has been in former days to London, the *ne plus ultra* of nuisances. No city can be preserved healthy without a proper and efficient system of sewerage. Deficient drainage and the poisoning of the atmosphere in the immediate vicinity, occasioned by moisture and the accumulation of filth, are causes of fever and other preventable diseases, in the closely-built, crowded, and illy-ventilated neighborhoods of every metropolis.

According to the best evidences extant, Philadelphia enjoys, both in regard to surface and soil, ample advantages for drainage. The arrangements for this purpose consist in a proper regulation of lines and heights in all the streets, alleys, and courts; and except in instances where irregularities occur through want of repair, the inclination of the surface is held to be sufficient for drainage.* The sewers, when properly regulated, will have a fall of 43 feet from the highest point of the old city on Broad and Arch Sts., which is thought to be a height capable of carrying off any amount of water, either by surface drainage or underground sewerage.

To avoid the collecting of too much water at any one point in time of rain or melting of snow, sewers are made under many of our principal

* Assist. City Surveyor's Report to Com. of Councils, 1848.

streets, varying in size from three to ten feet in diameter in the clear. These culverts or sewers have inlets at the corners of those streets, where a large amount of drainage is likely to accumulate. The outlets are into the docks on the Delaware and Schuylkill.

Whilst we admit all these natural advantages and public improvements for the thorough removal from our streets, of those active agents so injurious to pure air and productive of sickness, it is a well-ascertained fact, that both our surface and underground drainage systems are deficient in their practical operation, and exert to some extent an unhealthy influence.

As a city, we do not enjoy such entire exemption from the accumulation of putrid filth, and the noxious exhalations that follow its decomposition in the gutters and cesspools or inlets, as well as at the outlets of the sewers, as would render them free from the charge of contaminating the atmosphere. This well-known imperfection involves the production of a larger share of those irrespirable gases that deteriorate our air, than all other public nuisances combined; and these noxious vapors increase in power with the density of the population.

Nevertheless, it is obvious that nothing short of such a system, when perfected, can ever make our city, in a sanitary point of view, what it should be. Dr. James Wynne,* says truly that "sewers, when properly constructed, are among the most efficient agents within our reach for promoting health, but when improperly built or neglected, they are in the highest degree insalubrious." Surface drainage may have its advantages by facilitating the discharge of surface water, and by removing moisture from our streets, but cannot be substituted for underground drainage by sewers. The latter have a twofold object; they not only keep the streets dry, but they drain the cellars of the houses located on the streets wherever they are laid, by conveying away the water and moisture of the underground springs.

They must, however, in order to be efficient, be numerous, of a proper inclination, size, and shape. If too large, the water passing through them loses its hydraulic pressure, and the solid portions of their decomposing contents being deposited, choke them, and cause the foulest emanations. On the other hand, should they be inadequate in size, or of insufficient capacity for the district depending on them for the drainage, the evil will be equally serious. A great fundamental error in the plan of sewerage as adopted in our city appears to be, in the construction of the inlets, and the position of the outlets into the docks on the margin of the rivers, as well as in the method adopted for cleansing them, which is exceedingly defective, and liable at times to render the

* Report on Hygiène. Transac. Am. Med. Association, vol. ii. 1849.

atmosphere in the immediate vicinity of the inlets at the corners of our streets, or the outlets into the docks, very unwholesome for breathing. The inlets where there are no traps, as in some instances, continually emit offensive and sickening gases, which are greatly increased in damp weather, while those arranged with traps, owing to the constant accumulation of offal in their mouths or cesspools, are opened every few weeks to remove this deposit of mud and filth; and oftentimes this filth is allowed to remain for several hours in the street, exposed to the sun's rays in the hottest days of summer, loading the atmosphere around with exhalations, which are highly injurious to health.

An unmistakable defect in our system of sewerage, arises from the want of a uniform and extended plan in the regulation not only of the grades, but of the diameters of the culverts that have been laid down. In former years, little attention was bestowed upon progressive sewerage; the several culverts then constructed were laid without a careful reference to the extent of surface required to be drained, to the natural features of the city plot, to the prospective increase of the city limits, or to heavy inundations from rains or sudden thaws, &c., the consequence of which is, that many of the old culverts are unfitted, both as regards capacity and inclination, to meet the increasing wants of those improved sections of the city which are now drained by them.

Surface drainage is adopted to a very great extent. Where the gutters are kept in repair, with a sufficient descent from their summits to the inlets of the sewers, a proper supply of water to carry off their more solid contents, and the occasional use of the broom, they need not become a nuisance. But it cannot be denied that in many of our streets, alleys, and courts, either through negligence, irregularity in the grading, or an indifferent supply of water, there exists at all times a collection of mud and offal that deteriorates the atmosphere, and is likely to produce sickness. During the hot months especially, this state of things is much increased, owing to rapid decomposition, wherever there are deposits of putrid animal and vegetable matter, and it is no uncommon thing to find our summer diseases prevailing to a great extent in such locations, especially among the infantile population.

Another defect in our surface drainage may be attributed to the mode of paving the streets with cobble stones; the interstices between each affording a nidus for mud and other offal, which, decomposing under the rays of the sun during summer, become an aggravated cause of the production of disease.

A complete system of sewerage and drainage is of the first importance, to the salubrity of a city and the comfort of its inhabitants. The relative health of those cities which enjoy the benefits of well con-

structed sewers and gutters, over those where none exist, is too striking to require any comment.

The benefits of sewerage on the health of cities, is well illustrated by Dr. T. Southwood Smith, before a committee of the House of Commons, in which he says, "in every district in which the fever returns frequently and prevails extensively, there is uniformly bad sewerage."

In the report of the cholera in 1849, in this city as published by the Board of Health, it is observed that in Richmond district, the increased amount of disease when compared with other places, was believed to be owing "to its locality along the river front, its want of proper drainage and sewerage, &c." In Kensington, to the unpaved, ungraded and undrained condition of many of its streets.

In our estimation, surface drainage should not be allowed, wherever it is possible to dispense with it. Well constructed drains through iron pipes, leading from dwelling-houses, with properly adjusted traps, and communicating with the sewers, which should be found in all our principal streets, would be a decided sanitary improvement over the present objectionable system. Boston has very little surface drainage from houses, their gutters being dry, except after heavy rains. They send forth no offensive exhalation, and are perfectly innocuous.

The most serious disadvantage arising from our sewerage system, with the manner of discharging the contents of the sewers into the rivers from their outlets, is the horrid nuisance, occasioned by the amount of offal constantly pouring from their mouths, and left by the influence of the tides in the docks along the wharves. This decomposing and offensive mass of animal and vegetable refuse, by its constant accumulation, together with other filth thrown into the docks or conveyed there in various ways, soon fills them up. Exposed to the influence of the sun daily and for hours, as the tide recedes, it sends forth reeking into the surrounding atmosphere, the most sickening exhalations.

It is a well known fact, that these docks have for many years, been the receptacle for all manner of filth, and have been viewed as among the predisposing causes or the foci, of disease, and for the concentration of epidemics in their vicinity. In nearly all the malignant fevers which have invaded this city since 1741, they have been known to spend their strength among the families residing in the neighborhood of these docks.

It must be self-evident, that the extensive and dangerous sanitary evils arising from imperfect sewerage in our city, demand correction at the hands of the authorities. Its continued existence is a blot upon the intelligence of our city, while it contributes to the introduction of disease, suffering and death to our doors.

It is a question of some moment, in which all are interested; how

shall this sewer evil be corrected? or, what shall be done with the contents of the sewers?

In London this subject has attracted considerable attention from men of science. Long since, it was well ascertained that the contents of the sewers were not only productive of an unhealthy atmosphere, but affected seriously the purity of their water. The most popular plan for the abatement of the nuisance, has been the organization of "Sewage manure companies," for the purpose of disposing of the contents of the sewers, a large proportion of which in London consists of human ordure, and converting it into manure for agricultural purposes. Not only the solid contents are thus appropriated, but the fluids of the sewers are also disposed of, and extensively applied to garden vegetation.

This is no utopian scheme; and when we reflect upon the large supply of material, that could be readily and advantageously employed for manuring lands, that now goes to waste in the subterranean canals that traverse the length and breadth of our city, we must be sensible that this immense quantity of offal, in a commercial point of view, is worth the saving, while at the same time its removal by an approved system would prove a wholesome sanitary measure.

The nuisance created at the outlets of the sewers, by the accumulation of their solid contents, might be sensibly diminished, with the aid of brick or iron conduits, built beneath wharves extending some distance out into the current of the stream, through which the filth of the sewers would be carried and thus swept away more effectually by the tides.

Stench traps located at the inlet of every sewer, are in our opinion indispensable. As a sanitary improvement they are highly important. Where they do not now exist, the surrounding atmosphere at certain times, is loaded with the most noisome effluvia; and in those neighborhoods where the drains from water-closets, slaughter-houses or offensive factories, communicate with the culverts, it is increased two-fold.

To relieve the sewers from the accumulation of poisonous gases, to which they are at all times liable, various contrivances have been suggested and applied, without success. The only competent plan, in our judgment, is to connect the sewers with an upper current of atmospheric air, either through heated chimneys attached to the sides of houses, or iron shafts of sufficient caliber, erected in suitable places throughout the city; thus producing a constant draught of air, which would materially benefit the bad sanitary condition of our under ground sewerage.

But experience has shown clearly and positively, that neither sanitary legislation, nor scientific improvement, applied to our present defective

system of drainage and sewerage can avail anything, without an efficient water supply.

Sewers become absolutely injurious to health, by generating and diffusing the very poison they were designed to remove, without the co-operation of active currents of water. Dr. Southwood Smith, who has given much attention to this question, says, "that drains without water, do more harm than good, by diffusing poisonous gases through their gully holes."

Many as have been the objections urged against the free and frequent application of water to our streets and gutters, in warm weather especially, we hold it as an established maxim, that street cleaning of itself, to be effectual, must have an abundant supply of water.

Nor do we believe a proper reform in sewerage will ever be effected, or the evils connected therewith averted, until some plan similar, or equal, to that of flushing* the sewers is adopted, in order to carry off the daily accumulations of filth.

Whilst this interesting and deeply important branch of sanitary reform addresses itself more particularly to our municipal corporation, at the same time the voice of the medical profession may not be entirely disregarded or misunderstood, by directing the attention of the proper authorities to the urgent necessity of a change in the present system of sewerage, as a wise sanitary measure, productive of great public good, both for the comfort and health of the community.†

In the present confused state of the department of surveys, as a consequence of the consolidation of the several districts into one corporation; the irregularities in the construction of the sewers in the various sections of the city, as well as in the absence of a correct system of surveys of all the sewers, which were outside the city proper, but are now

* Flushing consists in collecting a sufficient body of water in a tank or other reservoir, so placed that its contents when suddenly evacuated, may sweep the whole length of the sewer, filling completely its interior; thereby carrying effectually before it every impurity into the common sewer or river. (Bell.) The hydraulic force and adequate supply of our water obtained from the reservoirs, is thought to be of sufficient power when let on with full head from our fire-plugs.

† We are gratified to learn that our intelligent City Surveyor is engaged in a searching survey of this whole subject, preparatory to the introduction of a more complete system for the thorough drainage of the city. The speedy consummation of an object so important is really necessary, and it is to be hoped, that the wisdom and liberality of our municipal authorities will not only favor this contemplated improvement, but will afford the Surveyor every facility to carry out in detail, so noble, so philanthropic an enterprise, that must, when completed, contribute in a very large degree to improve the health of the community by a removal of one of the prolific causes of disease.

under the supervision of the present Surveyor, it has been impossible to procure an accurate account of the number of miles of sewers that are laid down through our streets. In the old city proper, there are between 18 and 19 miles of sewers, varying in size from two to eight feet in diameter, and for those, in what were formerly the incorporated districts, we may give as an approximate number, about eleven miles, making in all 29 miles of sewerage; an amount totally inadequate for the complete drainage of the city, even under the very best arrangements.

Cesspools.—A grave nuisance, and one prejudicial to public health, which prevails to a great extent in our city, is the character and construction of the privies. By some writers they are looked upon as "one of the greatest abominations which can possibly be suffered to exist in the midst of a large city—a pestilential nuisance;" and further, "that it is impossible for any population to be healthy, living amid cesspools, or upon a soil permeated by decomposing animal and vegetable refuse," which refuse is continually sending forth the products of its chemical changes, in the form of sulphuretted hydrogen, hydrosulphuret of ammonia and nitrogen gases highly deleterious and irrespirable.

Hundreds of privies in the densely populated portions of our city, especially those attached to the houses in courts and tenements in the smaller streets and alleys, are frequently full, or in a very offensive condition; many of them without any proper ventilation and in near proximity to the dwellings, or in the cellars, either for want of yard room or convenience, and emitting the most fetid exhalations, saturating the atmosphere of the houses in the immediate vicinity. In some courts, the inmates of the row, comprising a number of families, have only one or two privies in common.

From this condition of things, can it be otherwise that many of the privies throughout our city are fertile sources for an impure atmosphere? Dwell for a moment upon the fact, that thousands of tons of human ordure, deposited annually, are undergoing the process of fermentation and decomposition, sending their nauseous and poisonous gases into the atmosphere we breathe, contaminating it at our doors, and even in many of our dwellings, and the inference must be, that this prevalent sanitary evil is a prolific source of disease.

The proper disposition of this indispensable refuse of a community, without its imparting appreciable offensiveness to our atmosphere, and exerting an injurious effect upon health, is a subject of absorbing interest.

The propriety of a change in the present system cannot be too

strongly insisted upon, as it is an every-day increasing and disgusting evil, in a sanitary point of view.

The City Surveyor, in a report to Councils a few years since, suggested the plan of having the water-closets to empty themselves into the common sewers, under certain regulations, which arrangement he believed "would lead largely in future building to the introduction of water-closets, in lieu of the old system of well privies, a system, nauseous in all its features, and more or less tending to inconvenience and disease."

We cannot, however, concur in opinion with this proposed arrangement under our present system of sewerage; believing, that the change would be productive of consequences quite as serious in a sanitary aspect, as the present mode of getting rid of human ordure.

A more feasible, less expensive, and more simple plan for the removal of this necessary nuisance would be, in our opinion, the construction of movable and disinfected cesspools which could be changed daily or weekly, and not only be a source of revenue to tenants and landlords, but an immense saving of a valuable agricultural agent, a large share of which at present goes to waste.

Street Cleaning.—Street cleaning in our city is performed, in some sections, by contract, and in others is done under the supervision of the Chief Commissioner of Highways. Its importance as a wise sanitary measure admits of no question.

The want of fidelity in carrying out the ordinance by the contractors, gives rise to frequent complaints from the citizens, of the filthy condition of many streets and gutters. No branch of the municipal arrangements for keeping the city clean and healthy, requires greater watchfulness than that of street-cleaning. It is highly essential to health and comfort. No amount of money, when properly disbursed, should be considered as extravagance on the part of the authorities, provided the outlay will preserve our thoroughfares, watercourses, and alleys clean.

A few years since, the subject of watering the streets during the process of cleansing them, particularly in hot weather, was extensively discussed. Various were the opinions advanced as to the propriety or impropriety of the measure. The majority were of opinion, however, that sprinkling might precede cleansing without danger to health, and that copious effusions of water was required for the gutters and sewers.

We have not been an idle observer of the objectionable practice in our city, during the hot season, of street-wetting at all hours of the day, nor of the deficient system adopted by the authorities in the limited application of water, during the cleansing of the streets and gutters.

The common practice of wetting the streets daily in hot weather until

they become thoroughly muddied, and this mud exposed to the rays of the sun, should be strictly forbidden as a serious nuisance.

While the moderate sprinkling of the streets to lay the dust, and this operation followed immediately by the free application of the broom, and the dirt removed as soon as gathered, can do no possible injury to health; on the other hand, the immoderate and indiscriminate application of water to filthy streets and gutters in hot weather, from plug, hose, or watering-carts, and the mud thus created, suffered to remain until the decomposition of the animal and vegetable offal disengages offensive and irrespirable gases injurious to health, is, in our estimation, an aggravated sanitary evil, and should be prohibited by an ordinance.

We do not wish, however, to be understood as opposed to the copious application of water for the gutters and alleys during the summer months, provided it be done at suitable hours, the filth be removed at once, and the application of the water be followed with the broom. As it is the great agent for cleanliness, we commend its free use under proper arrangements, deeming it highly refreshing in hot weather, and as a sanitary operation, having no equal.

Whenever there is an adequate supply of water, we would recommend the adoption of a system for the alternate opening of the plugs for several hours morning and evening during the warm weather, to be preceded by, and followed up with the free use of the broom.

Dwellings and Social Condition of the Poor.—Among other sanitary evils entailed upon our city, which contribute to increase its unhealthiness and swell its bills of mortality, may be included the habitations and the social condition, of a portion of the laboring classes and the vagrant poor. It is here that we find a large amount of preventable disease, the certain result of overcrowded, filthy, damp, unventilated tenements, with their half-famished occupants, daguerreotyped in physical and moral uncleanliness. From these nurseries of beggary, depravity and sickness, go forth those pestilential cases that help to crowd our public infirmaries, and to increase our death rate.

Various have been the philanthropic efforts to remedy this eyesore. Houses of employment, home missions, ragged schools, and other benevolent plans of relief; but they have scarcely accomplished the first step, in a sanitary point of view, towards reforming their domestic habits, or removing them from their dark and dreary homes of physical obscurity and moral degradation.

In our opinion, based upon experience and observation, the only adequate cure for the social condition of the lower strata of society, as we have pictured it, is the establishment of model dwelling and lodging-houses, under proper management, in various parts of our city. The

great utility of this sanitary system has been experienced in London and other portions of England. Its benefits upon the vagrant poor can hardly be estimated in their improved cleanliness, their personal comfort, their better health. As an evidence of the reform in this latter respect, Dr. Southwood Smith says, "no case of typhus fever or of cholera has occurred in any of these model dwellings, of which there are a number in London, since they were first opened. In one of large size, the Metropolitan, during three years the average annual mortality was only 1.36 per cent." Dr. Smith mentions that for a still lower class, "in 1308 regulated lodging-houses, numbering 25,000 lodgers, not a single case of fever had occurred in three months."

With this evidence before us, we are persuaded that if our public authorities would adopt a similar sanitary arrangement, for the improvement of the social condition of the laboring classes, by furnishing well-aired, well-lighted, dry, roomy dwellings, for their present confined, close, damp, dark, and unventilated abodes, and separate lodging-houses for single men and women, where they could be comfortably slept after the labors of the day, at the same time establish a house of correction for the vagrant and the street beggar, where, under judicial restraint, their habits and their morals might be improved by labor, the advantages would be almost immediately seen and felt in the diminution of pauperism, the suppression of vagrancy, the lessening of crime, but, above all, a sensible abatement of disease in our Blockley Hospital wards, while our bills of mortality would show a falling off in untimely and preventable deaths.

Ventilation.—Another subject, essentially requisite to the maintenance of a sound sanitary condition, and one that materially controls the rate of mortality in every city, is ventilation.

In cities, the inhabitants inhale an atmosphere vitiated with impure and poisonous gases, and containing a less percentage of oxygen than the air of the country. An atmosphere thus impregnated, cannot be breathed with impunity, because man requires for the process of vitalization 24 cubic inches of oxygen every minute. Deprived of this supply, his nervous energy flags, his functions, both animal and mental, cease to perform their accustomed offices with the vigorous tone of health, and his days are consequently shortened. It is remarked by staticians that the difference of mortality between a city and a country life, is equal to forty per cent. in favor of the latter.

Cleanliness and ventilation have a Siamese relationship. If you neglect either, you are sure to injure both. Improve the one and you reform the other.

Defective ventilation in a city is greatly increased by imperfect drain-

age and sewerage, as well as by a neglect of street cleaning. Streets are the air-tubes through which we breathe; hence, the wider these channels and the cleaner the streets are preserved, the more perfect will be the ventilation, and the healthier the population. In this question, all classes and conditions are alike interested. "To take care of ourselves, we must take care of one another." The improvement of our own premises betters the sanitary condition of our indifferent neighbor's. While, on the other hand, the poisonous air of crowded courts and filthy alleys is wafted by every breeze to distant streets, contaminating the atmosphere of more favored locations.

Among other prevalent causes of deficient ventilation in Philadelphia as well as in all cities, is the condition of the confined and crowded dwellings of the lower classes, whose inmates are shut out almost from the air, as well as the light of heaven. In these localities, there exist frightful causes for a deteriorated atmosphere. Pent up in narrow alleys, or contracted courts, with miserably ventilated houses, an overcrowded, filthy and depraved population, the air soon becomes like that of a charnel-house from being breathed over and over again, and is unfit for healthy respiration.

In possession of many natural advantages for healthy homes, it is much to be regretted that so little attention should have been given in bygone years, to the regulation of the streets of our city for ventilation; that the beautiful sanitary designs of its founder should have been so sadly marred, by the cupidity and ignorance of her citizens. Nor is it less to be deplored that in the construction of dwellings, neither the principles nor the necessity for ventilation have, as a general rule, been considered.

Enjoying as we do, a high degree of reputation abroad for salubrity, and while we may congratulate ourselves upon our exemption to a great extent, from an accumulation of those flagrant evils arising from defective ventilation, so common to many large cities, it is well to remember, that we labor under the pernicious influence of a few plague spots, where at all times the atmosphere is pestiferous.

London has its St. Giles; Paris its Faubourg St. Marcel; New York its Five Points, and Boston its Half-moon Place and Burgess' Alley; while we also have our Baker and Spafford Streets, where the wretched residents are pale, wan, sickly and squalid, the too sure effect of a constant exposure to a vitiated and deleterious atmosphere.

Besides the faulty ventilation of some of our lesser streets, and the dwellings of many of the lower classes, we should not forget that the importance of ventilation is neither fully recognized, in the erection of many of our large buildings, public as well as private, nor in the mode of ventilating and warming them after they are occupied.

Practical ventilation is intimately connected with sanitary improvements, and if the simple laws of nature, regulating the motions of the atmosphere, were considered and adopted in the construction of dwellings and the laying out of streets, we should have healthier cities.

It is gratifying to know, that within the past year, a single step has been taken by legislative enactment to enforce certain regulations that will check the erection of buildings in future, on contracted lots, in pent-up alleys, back to back, and side by side, without ventilation or the necessary yard room.

By a recent Act of Assembly, the office of Inspectors of Buildings has been created, to whom application must be made, and from whom a permit must be obtained before any building can be erected. Nor can any house be built on any street, alley, or court already laid out, of a less width than twenty feet; and every such house must have a yard equal to twelve feet square; nor shall any street, court, or alley be laid out hereafter of a less width than twenty-five feet.

This wholesome sanitary innovation upon a system of building upon every inch of ground that the cupidity of the owner could grasp, thus marring the beauty of our city and endangering public health, will, we trust, be followed by other salutary reforms, that must eventually restore to Philadelphia, in some degree, its beauty as originally contemplated by its sage founder, while it will enable the citizens to enjoy that immunity from disease which ought to be their rightful inheritance.

Intramural Interments.—The interment of the dead in the built portions of our city, is another of those sanitary evils, the existence of which, in the midst of a dense population, is calculated to foster disease, and therefore claims attention. While public sentiment everywhere, is opposed to the burial of the dead in the midst of the living, the practice is still continued in our own, as well as in some other cities, and to so great an extent is it carried, and in so careless a manner is it conducted, that it will eventually, if not prohibited by timely legislative enactment, be productive of those dangerous consequences to health, which have been experienced in the older cities on the continent and in England.

It is certainly not required of us in this report, to enter into any argument to illustrate the position we have taken, that intramural interments are attended with sanitary evils, and should be strictly forbidden. In England, the subject has lately undergone the closest investigation, the result of which has been to interdict by law, the further inhumation of the dead in cities. So effectually has this wise sanitary measure been carried out in London, where the practice (in the language of Lord Palmerston, in the House of Commons) had become "a disgrace to the metropolis of the empire, a pestilence and a nuisance to be tole-

rated no longer," that, according to the report of Dr. Letheby, the Medical officer, addressed to the City Commissioner of Sewers (Jan. 8th, 1856), "the last of the city graveyards has been permanently closed, together with the vaults attached. You have, therefore, relieved the city from one of the most prolific sources of pestilential disease."*

Nor has the question been entirely lost sight of in this country. The establishment of rural cemeteries in the suburban districts of our own and other large cities, afford ample evidence of the public sentiment in regard to the interment of the dead, in the midst of densely populated urban districts.

Several years since, the Board of Health of this city had their attention directed to the crowded state of our burial-grounds, and in an able report, showed conclusively, the danger to health growing out of the practice of intramural interments. A bill was also prepared and forwarded to the legislature, regulating all future interments in the city burial-grounds, providing for the closure of those which were already full, and prohibiting the opening of new ones in populated neighborhoods. This bill was never enacted into a law. But the same reasons prevail now, as were then urged, why the interment of the dead in the midst of the living should be discontinued. A single paragraph from that report, is sufficiently comprehensive to show the state of things as they now exist.

"Your Committee are convinced that the grounds within our own metropolis are, even now, sources of danger to the health of our citizens, and that every year the danger resulting from them must augment. Scattered as they are, over every neighborhood; surrounded by a dense and constantly increasing population, and many of them already comparatively crowded with dead bodies, which are carelessly, and in many instances superficially interred. Some of the grounds, particularly those belonging to the colored congregations, are even now decided nuisances, injurious to the health of the neighborhoods in which they are located."

From our own experience and knowledge of facts, we do not hesitate to assert, that there exist but very few burial-grounds in the thickly populated districts of our city, that are not already overcharged with the remains of the dead.

To avoid the danger, in a sanitary point of view, that will inevitably result from the accumulation of the dead in our city, timely legislative action is imperiously required; otherwise, a continuation of the present careless and superficial manner of interments will not only augment the nuisance already existing, but tend to spread disease, and annually swell our bills of mortality.

* Med. Times and Gazette, January 12th.

We are happy to learn that the Board of Health have had this subject under consideration, and may solicit from the legislature, at the next session, such action as will be necessary to remedy the evil.

Animal Refuse.—Another prolific cause of the insalubrity and the increased mortality of our city, over a rural district, will be found in the constantly accumulating amount of animal refuse. The rapid decomposition of this refuse, by disengaging poisonous gases, taints the atmosphere, renders it unfit for healthy respiration, and thus, not only generates disease, but assists in its propagation. It is no longer a question of doubt, as to the capability of decomposing animal remains in a highly concentrated state, producing the most malignant forms of fever. Dr. Southwood Smith goes so far as to say, that when the gaseous poison thus generated is largely distributed in the atmosphere, it is not only capable of producing sickness, but by varying the intensity and doses, "it is possible to produce fever of almost any type."

The sources whence emanate more especially, the large amount of of animal refuse at all times spread over our city, consist chiefly in the slaughtering of cattle; the various trades and occupations that use animal remains; the keeping of cows, sheep, hogs and other animals; the gathering of bones and the remains of dead animals to be found in the streets and on open lots; together with the imperfect system of constructing cesspools, to which we have already alluded.

If, therefore, animal refuse is a prolific agent in deteriorating the air, and causing disease and death in our city—and if this agency be a removable one, every dictate of humanity, as well as a desire to promote the comfort of individuals, and to behold the sanitary prosperity of our metropolis, should favor the means to be employed for the removal or mitigation of this dangerous evil. But in attempting to get rid of this extensive and very prevalent nuisance, it is of great importance to do so without the risk of creating a greater one; a subject demanding both sound judgment and practical experience. This end should ever be kept in view.

There are, however, other existing causes for an impure atmosphere, and for an unhealthy condition of our city, that come under the class of sanitary evils, quite as prevalent and injurious as those we have named. We shall be constrained, however, from the length to which the report under this head has grown, merely to allude to them, without furnishing their portraiture. To remove these sanitary evils, or to mitigate them, wherever their removal is found to be impracticable, should be considered, as it really is, the most responsible department of our municipal corporation, if we desire to preserve that high reputation for health for which we have been distinguished. And we cherish the hope, that

those who are engaged in the onerous and multiform duties involving the administration of the city government, will give this important branch of their functions a most careful supervision in the future.

In several of the answers received to the circular of the Committee, allusion is made to the sanitary condition of our city; all of which strengthen the views we have advanced, as to the existence of numerous local causes for an impure atmosphere.

Dr. Atkinson says: "As a general thing, the sanitary condition of our city is excellent; but locally, there are many causes of complaint. In the 3d and 4th wards there exist many little streets, blind alleys &c., in a most filthy condition, and where the people are actually 'packed' in their houses; these are often very damp, exceedingly dark, and filled with filth of every description."

Dr. Pugh observes: "The crowded state of many of the dwellings of the poor, by the occupancy of several families, as also a lamentable defect in the drainage of the city, are in my opinion detrimental to its health."

Dr. Zorns, of the 11th ward, comments largely upon the defective sanitary arrangements of the city, and writes thus: "If I were to name any local cause productive of an impure atmosphere, it would be our common sewers; I may be singular, but after observing their condition for many years, I am of the opinion that they not only invite epidemic and endemic diseases, but foster them when prevalent. From many of the inlets the stench is intolerable, and, especially in warm weather, the exhalations emitted, poison the surrounding atmosphere. No sewer should be constructed without sufficient fall to keep itself clean."

Dr. Gallaher observes: "You are well aware of my opinion of the necessity for purity and cleanliness, in order to insure the continuation of good health in our city, and of the danger arising from the offensiveness of slaughter-houses, cow-pens, hog-pens, bone boiling, soap boiling, and all similar establishments, particularly when located in densely populated neighborhoods.

That such establishments in the condition they are usually found in our city, are productive of an impure atmosphere, is unquestionably true, and that an atmosphere thus impregnated, loaded I may say with obnoxious and poisonous gases, is prejudical to health, is equally true and incontrovertible." Again he says, "I am satisfied from long experience, and close observation, that the great and ever acting cause for the difference of salubrity of towns especially, is not altogether in the locality, as some writers would verily have us believe, but in the speedy and effectual removal of all agencies that tend to adulterate the atmosphere."

Dr. Turnbull thinks that the sanitary condition of our city is im-

paired by "the use of brick pavements, and the too frequent use of water upon them. Bricks, from the porosity of their texture, and the mode in which they are placed, being loosely laid in sand, are liable to drink in large quantities of water, and require a long time, or a hot sun to free them from their dampness. Nothing has so great a tendency to produce bronchial diseases as wet feet, and its influence upon consumptive patients is highly injurious." The Doctor suggests stone flags instead of bricks for all new pavements, and dry scrubbing where bricks are already laid, instead of the copious effusions of water that are daily practised by many of our notable housewives.

We can fully agree with Dr. Turnbull in regard to the annoyance to which we are subjected at all times of the day, by this constant inundation of our pavements with water, and we would also enter our protest against the patchwork brick paves; but in our opinion, much of the evil alluded to, may be removed by an ordinance, regulating the time for this general ablution of our sidewalks.

Dr. Lamb, who resides in the suburban district of Frankford, 23d ward, a manufacturing neighborhood, says they are "free from any local cause which would produce impurity of atmosphere. Our poor have plenty of room, and full employment. Our large manufacturers in Frankford are liberal, as to money and time. As a consequence, our working population, in general, are healthy and happy, and give the city authorities very little trouble as to cleanliness. We have very few who are really poor—no localities which can be designated as filthy."

Meteorology.—The accompanying tabular abstract of the meteorological observations for the year, is taken from the writer's report to the College of Physicians. They were made and recorded by Prof. James A. Kirkpatrick, of the Philadelphia High School, who very politely and kindly furnished them from his valuable daily records of the weather.

Abstract of Meteorological Observations made at Philadelphia, Pa., Lat. 39° 57′ 28″ N., Long. 75° 10′ 40″ W. from Greenwich, for the year 1855. By Prof. JAMES A. KIRKPATRICK.

1855.	BAROMETER REDUCED TO 32° F.				THERMOMETER.				DEW-POINT, 2 P. M.				Force of vapor, 2 P. M.	Relative humidity, 2 P. M.	Rain and melted snow.	WINDS.	REMARKS.
	Mean inches.	Highest inches.	Lowest inches.	Range inches.	Mean degree.	Highest degree.	Lowest degree.	Range degree.	Mean degree.	Highest degree.	Lowest degree.	Range degree.			Inches.	Monthly resultant; No. of times in 1000	
January . . .	29.971	30.610	29.163	1.447	34.4	62	16	46	28.6	52.7	12.7	40.0	.157	.72	2.601	N. 17¾° W., 46-100	*Coldest day.*
February . . .	29.840	30.199	29.535	0.664	26.7	46½	—1.0	47⅝	18.8	45.3	—2.0	47.3	.111	.71	2.480	N. 50° W., 83-100	Feb. 6. Mean temp. 4½°. Thermometer lowest, Feb. 7, —1° (one degree below zero).
March	29.798	30.272	29.310	0.962	38.8	64	16	48	27.3	44.7	20.0	24.7	.152	.53	1.979	N. 60° W., 61-100	
April	29.856	30.179	29.234	0.945	52.9	87	22	65	40.4	55.3	21.3	34.0	.281	.54	2.148	N. 52° W., 39-100	
May	29.807	30.124	29.449	0.675	63.8	87	40	47	46.1	60.7	25.3	35.4	.321	.43	3.033	N. 48¼° W., 56-100	*Warmest day.*
June	29.739	30.020	29.395	0.625	71.9	95	51	44	59.4	77.5	41.3	36.2	.537	.57	8.008	S. 76° W., 46-100	June 30. Mean temp. 83¾°. Thermom. highest, 95° on June 30 and July 19.
July	29.851	30.135	29.645	0.490	79.7	95	57	38	68.7	78.5	52.4	26.1	.712	.62	6.594	S. 68° W., 43-100	
August	29.923	30.255	29.514	0.741	75.0	84	55	29	64.0	75.2	47.8	27.4	.616	.62	3.237	N. 33½° W., 7-100	*Barometer.*
September . . .	29.982	30.224	29.623	0.601	70.2	90	45	45	60.7	71.9	43.9	28.0	.551	.61	4.129	N. 67° W., 17-100	Highest, 30.610, Jan. 8. Mean for the day, 30.586. Lowest, 28.946, on Dec. 9. Mean for the day, 29.175.
October	29.831	30.185	29.453	0.732	55.2	77	34	43	47.0	68.5	26.9	41.6	.348	.61	3.416	S. 88½° W., 70-100	
November . . .	29.948	30.228	29.330	0.898	48.3	67	28	39	39.4	58.1	13.2	44.9	.266	.60	2.022	N. 64° W., 43-100	
December . . .	29.919	30.445	28.946	1.499	37.5	60	13	47	30.1	57.3	15.1	42.2	.182	.66	5.006	N. 77° W., 47.100	
Annual means 1855	29.872	30.610	28.946	1.664	54.5	95	—1	96	44.2	78.5	—2.0	80 5	.353	.60	44.653	N. 63½° W., 39-100	
Annual means 1854	29.913	30.518	29.158	1.360	54.43	100½	6	94½	43.98	72 07	12.0	60.7	..	..	45.23	N. 77° W., .378	

According to the above table, the mean temperature of the year was 54.5°, being 2.1° above the average for thirty years, and 0.38° below the mean for 1854. The maximum was 95, while the minimum was —1°, or one degree below zero. The range of the thermometer, therefore, was 96°.

The coldest month in the year was February, when the mean of the mercury was 26.7°. The coldest day of this month, and which was the coldest of the year, was on the 6th, when the mean of the thermometer was $4\frac{1}{2}$°, although on the following day, the 7th, the mercury stood at one observation 1° below zero, still the mean of the day was $5\frac{3}{4}$°.

The hottest month throughout the year was July, the mean of the temperature being 79.7°. The warmest day, however, was on the 30th of June, when the mean heat was $88\frac{3}{4}$°, but on the 19th of July, the thermometer stood at one time as high as 95°, while the mean of that day was only 88°.

The indications of the barometer gave the mean pressure of the atmosphere for the year as 29.872. The maximum, 30.610. The minimum, 28.946. The range, 1.664.

On the 8th day of January, the mean of the barometer was 30.586, but during the day it was up to 30.610, the highest point gained in the year. The mean of this month (January), was 29.971, or less .011, than the mean of September, which was 29.982, showing the highest mean over any month for the year.

The lowest point to which the mercury fell in the barometer, was 28.946, on the 9th of December. The mean for that day was 29.175. The lowest mean for any one month was 29.739 in June.

The average dew-point for the year, as calculated by Prof. Kirkpatrick, by substituting the force of vapor, existing in the atmosphere, and the relative humidity or percentage of moisture when compared with complete saturation, will be found as 44.2, the force of vapor .353, and the relative humidity of the atmosphere for the year 60′. These observations were made at 2 P. M. daily.

The amount of rain and snow that fell during the year was equal to 44.653 inches. The greatest quantity in any one month was 8.008 inches, in June; in any one day 2.835, on July 20th. The least gauge of rain for any month, was found to be in March, 1.979 inches.

It will be seen in reviewing the annual means for 1854, and comparing them with those of 1855, that the latter has been more favorable in point of temperature, moisture and rain.

We have also appended a synopsis of the state of the weather, for each month in the year, which will be found useful for future reference.

State of the Weather.—*January.* During this month, the thermometer ranged 46°, from 62°, the highest point, which was on the 7th, to 16°, the lowest, on the 25th. The first day of the month was clear, but followed by eight cloudy days, with rain and snow. The wind during these eight days was from the N. E. On the 9th, the barometer standing at the highest monthly point, 30.610, the wind blew from the N. W., and the weather cleared. On the 10th, the wind shifted to the northeast; the weather was cloudy, with snow, and continued cloudy to the 18th, when it cleared for a day, with the wind from the west-northwest. On the 21st, rain all day, with high winds at night. The 23d was clear, but on the 24th, the barometer 29.911, the wind from the N. W., it snowed in the morning—the afternoon and evening cloudy. On the 26th, there was rain, hail, and snow for about three inches, and the barometer fell to 29.163, the lowest point for the month. The prevailing winds were from the north and east. The rain and snow, when melted, measured 2.601 inches. The greatest diurnal range of the thermometer was 24° 2′′, on the 14th, the wind being variable and the day clear. There were 17 cloudy days, 9 rainy days, and six clear days during the month. The monthly range of the barometer was 1.447 inches.

February. The extremes of temperature in this month was from 1° to 46½°. The barometer ranged from 30.199 to 29.535, the mean for the month being 0.159 inches. The prevailing winds were from the northwest. On the 7th, the thermometer stood at its lowest point, 1°. But the lowest mean for any one day was on the 19th, viz., 1.7. On the 7th, it commenced snowing, and continued until the 9th, when it snowed to the depth of five inches. The last half of the month was cold and clear, the wind from the west and northwest, the thermometer standing between 37° and 17°.

During six days of the month, it was cloudly, seven clear, and the remainder variable. The melted snow and rain amounted to 2.480 inches, more than half of which fell on the 14th of the month.

March came in clear and cold, the thermometer standing at 16°, while the barometer was at its highest point, 30.272. The greatest diurnal range of the thermometer was 14.7, on the 7th of the month. The prevailing winds blew from north to west. Eight days in the month were clear. Eleven were cloudy, and from the 11th to the 20th it rained, drizzled, was cloudy every day, with snow or hail, and thunder and lightning. The thermometer indicated a temperature for the month of 38.8°. On the 6th and 31st of the month, the mean of the thermometer stood above 25°, while the highest point was 64° on the 31st. Eight observations indicated the wind from the northwest, seven from the south and southwest; three were variable. The monthly range of the barometer was 0.962 of an inch, and of the thermometer 48°. The rain and melted snow that fell measured 1.979 inches.

April was variable. The range of the thermometer was 65°, and the barometer 0.945 inch. The month opened with the wind from the N. W. clear, and the thermometer 22°. On the 8th, the wind shifted to the S. W., foggy, thermometer at 47°, followed by rain for two days. On the 11th snow fell, with winds from W. N. W. From the 13th, the mercury rose to 52°, daily mean, and continued to ascend until the 27th, when it reached its highest monthly point, 87°; wind S. W., with thunder and lightning.

During the month there were six clear and fourteen cloudy days. The remainder were variable. The amount of rain equalled 2.148 inches. On the 26th, the range of the thermometer was 17.3.

May opened with rain, and gave throughout the month 3.033 inches; westerly winds prevailed. On the 15th, the thermometer stood as high as 87°, wind S. W., and cloudy. It rained on eight days, was clear eight days, and overcast fourteen. It was a mild, but showery month. The range of the thermometer was 47°, the barometer 0.675. The mean of the barometer was 29.807, the thermometer 63.8. Its lowest point was 40°, with rain, and the wind N. W.

June was characterized by the quantity of rain that fell, measuring 8.008, or nearly double the mean for the same month for four years. There were much thunder and lightning. The minimum of the barometer was on the 7th 29.395, its maximum on the 27th 30.020. The highest temperature was on the 30th, 95°, the lowest 51, on the 13th. The mean of the dew-point was 4° higher than the mean for four years. The mean of the thermometer was 71.9, its range 44°; that of the barometer 20.739, 0.625.

Ten days the wind was noted variable, four from S. E., ten W. by S., four W. by N., and two N. E. The rains were warm, and from the south, thunder, lightning, and high winds. Rain fell on thirteen days.

July was an extremely warm month; the mean of the thermometer stood at 79.7, two degrees above the average for four years. The extremes were from 95° to 57°; the monthly range was 38′. Six inches of rain fell during the month; $2\frac{2}{3}$ inches of this quantity was on the 20th, with heavy thunder and lightning. The barometer for the month was 29.851. The prevalent winds were from the W. and S. W., in all fourteen days. For eight days the wind was variable.

The barometer for the month ranged 0.490 of an inch. Its daily maximum was 30.107 inches, its daily minimum 29.685 inches. Its lowest point was 29.645, on the 13th, the day cloudy, wind from S. W., the mean of the thermometer 80.8, the dew-point 72.1. Fourteen whole days are marked cloudy, eleven clear and cloudy, and six clear. Rain fell on eight days of the month.

August presented a cooler month than July, the mean of the thermo-

meter being 75°, the maximum but 84°. The extreme range was 29°, the minimum being 55°. These extremes occurred between the 17th and 19th of the month, the wind shifting from S. W. to N. W. The highest range of the barometer was on the 20th, when it stood at 30.255. The lowest was on the 9th, 29.514. The mean dew-point was 64°. The rain-gauge showed 3.237 inches. Thunder and lightning were frequent. The prevailing wind was N. by. W. There were thirteen entirely cloudy days, and eight whole clear days. The barometer's range for the month was 0.741. Rain fell on eleven days. The greatest amount in one day was 1.880, on the 23d, when the barometer was 29.751, thermometer 78.8, and the wind S. S. W., with thunder and lightning.

September. Up to the 12th the weather was clear, the wind chiefly from the S. W.; thermometer varying in its daily mean from 76.8 to 83.7. The coolest day of the month was the 19th, when the thermometer stood lowest, 45°, the wind from the N. E., with rain. Ninety was the highest point of the mercury in the thermometer on the 12th of the month. The barometer was highest on the 20th, marked 30.224, and lowest on the 18th, 29.623. The mean of the dew-point was 60.7.

During this month, there were 12 clear days, and but 4 cloudy days, while the rain that fell gauged 4.129 inches. The wind was from the S. W. eleven days, from the N. E. eight days, and variable five days. The monthly range of the thermometer was 45°.

October. This month came in with cloudy weather. The barometer was lowest for the month on the 3d, when it stood at 29.453. On the 4th, from seven to eleven in the evening, it was clear, with a brilliant aurora borealis; on the 7th, the first hoar frost was observed, the wind being W. N. W., the thermometer at 51°. The highest point of the thermometer for the month was 77°, on the 5th. The lowest was 34°, on the 26th. There were in all nine whole cloudy days. It rained twelve days in the month. The first snow of the season was on the evening of the 25th, the thermometer at 41.7, the wind west. There were but two entirely clear days, viz: the 5th and the 17th, the remainder being variable. The gauge of rain for this month was 3.416 inches, more by 0.653 inch than for October for five preceding years.

November. The observations for this month gave the mean of the barometer 29.948, the thermometer 48.3. The force of vapor 0.266, and the amount of rain 2.022 inches. The wind was from the N. E. eleven days, from the N. and W. seven days, from the S. and W. five days, the remainder variable. There were 13 entire cloudy days, five whole clear days. There was rain on seven days of the month, and a light fall of snow on the 21st, the thermometer at 40.8. The highest range of the thermometer 67°, on the 16th, while the lowest was 28°,

on the 23d, so that the extremes of temperature were within seven days. The range of the barometer was 0.898. The first eight days of the month were cloudy and foggy, with some drizzling rain. On the 17th the diurnal range of the thermometer was 15.3.

December opened with clear weather, and the wind from the S. W., the thermometer standing between 39.7 and 41.3 from the first to the eighth day. On the evening of the eighth there was hail, and on the 9th rain, which measured 1.456 inches, when the barometer fell to its lowest point for the month, 28.946, but on the 12th it reached its highest, 30.445, with the wind from the W. N. W., the thermometer at 30. On the 13th there was snow and drizzling sleet. The thermometer reached its highest point on the 16th, viz: 60°, wind S. W., barometer 29.742. The gauge of rain for the 15th and 16th was 1.411. The amount of rain that fell during the month was equal to 5.006 inches.

The lowest point of the thermometer for the month was 13°, on the 27th, the wind from the west. The range during the day was 8.2. On the 28th, 29th, and 30th, snow fell, accompanied with hail. The prevailing winds were from the west. During eleven days it was cloudy, with rain on seven of them. On the 22d and 25th it rained all day. The monthly range of the thermometer was 47°, the barometer 1.499.

II. MORTUARY TABLES.

Comparative Mortality.—In the following tables we have presented the comparative deaths at fourteen distinct periods of life, together with the stillborn, and also the comparative number of deaths to population, to mortality, &c., in the four principal cities on the Atlantic slope. These estimates will exhibit the marked favorable death rate in Philadelphia, when contrasted with that of other cities.

1855.	Population.	Stillborn.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.
New York	650,000	1,659	6,508	5,630	855	307	484	2,029	1,738
Philadelphia	500,000	588	2,657	2,035	405	156	305	1,066	928
Baltimore	215,000	390	1,306	1,147	249	127	159	484	462
Boston	162,748	228	1,045	964	152	56	135	469	423

1855.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 and upw'ds.	Age unknown.	Total.
New York	1,250	855	653	437	186	46	6	85	22,728
Philadelphia	650	537	493	391	191	49	7		10,458
Baltimore	356	281	221	169	82	25	7		5,465
Boston	273	209	151	130	62	11			4,308

This table shows the mortality at different epochs of life in four cities. It is evident that while in each of them the burden of deaths takes place within the first year of life, it is less in our own city than in either of the others. While New York gives 1 death under one year in every 99 of the population, Philadelphia gives 1 in 188; Baltimore 1 in 156, and Boston 1 in 155.

A similar ratio prevails, until we reach the 9th decennial term, or beyond the period of active manhood, where the comparison fails. Here we find that the ratio in Philadelphia increases, while that of New York decreases, showing a higher average longevity in favor of the former city.

1855.	Population.	Total mortality.	Ratio of deaths to population.	Deaths to every 1000 inhabitants.	Per ct. of deaths under 5 years to total mortality.	Deaths under 5 years to every 1000.	Ratio of stillborn to deaths.
New York	650,000	22,728	1 in 28.59	35.	53.40	18.67	1 in 13.70
Philadelphia	500,000	10,458	1 in 47.81	20.91	44.86	9.38	1 in 17.85
Baltimore	215,000	5,465	1 in 39.52	25.41	44.88	11.40	1 in 14.01
Boston	162,748	4,308	1 in 39.36	26.59	46.63	12.40	1 in 19.33

The averages, deductions, and comparisons drawn in this table, prove conclusively that the mortality in our own city is much less when compared with the total of deaths, with the deaths to population, or with every thousand than in the other Atlantic cities.

While in New York 1 in every 28 of the population dies annually, and in Baltimore and Boston 1 in every 39, in Philadelphia there is only 1 in every 47; more favorable by one-half, than the death rate of New York, and nearly one-fourth that of Boston and Baltimore.

Again, the health of Philadelphia contrasted with that of the other cities named in the table, is shown by estimating the deaths to every thousand of the population. While New York contributes 35, Boston 26, and Baltimore 25, Philadelphia gives only twenty.

Nor can it be overlooked, that the infantile population in New York suffers by death to a far greater extent than in either of the other cities. Those under five years of age (exclusive of stillborn) make up 53 per cent. of the total mortality; Boston 46 per cent., while Baltimore and Philadelphia are each 44 per cent., less by 8 per cent. than the former, and 5 per cent. than those under five years in the latter city.

The deaths under five years in every thousand of the population presents an equally favorable contrast; New York furnishing 18, Boston 12, Baltimore 11, and Philadelphia only 9 in every thousand.

It will be seen, too, while the population in New York is but 13 per cent. greater than that of Philadelphia, the deaths for the last year were 35.90 per cent. more than in our own city. The ratio of stillborn

children to the mortality is less in Philadelphia than in either of the other places.

The preceding estimates are sufficiently clear to maintain the position, that we are the healthiest of the large Atlantic cities, and that for salubrity, we should have the preference before the others named in the table.

Annual Mortality.—The entire mortality for the year 1855, as reported to the Board of Health, was 10,457, which was less by 1327, or 5.96 per cent. than the aggregate number of death for 1854.

Of the total of deaths, 5545 were males, and 4912 females, presenting the usual excess of mortality in males, equal to 6.13 per cent.

By deducting the number of stillborn children (588) from the total mortality, the aggregate of deaths for the year is reduced to 9869.

The mortality within the first year of life was 3247, or 31 per cent. of the whole number of deaths. Between one and two years, 1094: between two and five years, 939. Total, under five years of age, 5280, or 50.48 per cent.

Within the 20th year, there were 5558 deaths, or 56.31 per cent. of the mortality. Beyond this period, or among the adult population, there were 4311 deaths, equivalent to 43.79 per cent. of the whole. Of this number 581 or 5.99 per cent. were between 70 and 90. Forty-nine between 90 and 100, and seven were centenarians; one of whom had lived beyond her 110th year.

To obtain a more definite estimate of the health of our city, or of the deaths from accredited diseases alone, it will be necessary to exclude all those reported under the following heads :—

Casualties	130
Burns and scalds	37
Concussion of the brain	3
Exposure	7
Drowned	106
Poisoning	3
Strangulation	2
Suffocation	14
Suicide	27
Violence	2
Country, from the	134
Debility	393
Fracture	13
Malformation	43
Old age	173
Stillborn	588
Unknown	220
Deducting this aggregate of	1895

From the total mortality (10,457) will leave 8562 deaths charged to distinct diseases. This net number is less by 1267 than those reported for 1854. By an examination of the quarterly record of deaths, it will be found that 1144, or 90 per cent. of this decline in mortality for '55, is accounted for in the third quarter.

The deaths from diseases of the lungs and air-passages, were 2,586, or 26.20 per cent. of the total mortality.

Consumption of the lungs contributed 1327 towards the aggregate of deaths for the year, equal to 13.45 per cent. (stillborn excluded).

The death rate to population from consumption, was as 1 in every 376.03. In every thousand of the population, it is rated 265.

Of those who died of consumption of the lungs under 20 years, there were 239; thirty-six of these were under one year of age! That period of life between 20 and 30 furnished the largest number of any other decennary, amounting to 427. Forty were beyond 70 years of age. Early manhood, or those ages included between 15 and 50, appears to have been most liable to consumption. Within this range, 1015 of the deaths occurred, equal to 76.48 per cent. of the whole.

The following Tabular Statement shows the Mortality from Consumption of the Lungs, during each Month of the year 1855, *at fifteen distinct periods of life, with the Sexes designated for each month.*

AGES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Under 1 year . . .	3	2	2	...	7	6	6	4	1	1	2	2	36
From 1 to 2 years .	3	2	3	2	1	...	1	2	...	...	...	1	15
" 2 to 5 " . .	2	3	3	3	3	2	4	1	2	1	3	2	29
" 5 to 10 " . .	3	...	2	1	2	3	...	...	1	1	3	1	17
" 10 to 15 " . .	...	3	3	2	3	1	2	2	2	2	...	1	21
" 15 to 20 " . .	10	5	13	8	10	7	9	11	8	15	11	14	121
" 20 to 30 " . .	49	34	49	32	49	21	33	44	29	31	25	31	427
" 30 to 40 " . .	33	26	29	23	26	13	16	29	19	37	16	21	288
" 40 to 50 " . .	14	10	17	22	13	15	14	23	13	18	13	7	179
" 50 to 60 " . .	7	10	9	8	13	4	5	7	3	7	5	14	92
" 60 to 70 " . .	5	6	5	7	9	4	2	4	5	7	3	9	66
" 70 to 80 " . .	1	5	1	2	4	1	5	2	...	3	...	1	25
" 80 to 90 " . .	2	2	...	...	4	...	...	...	...	1	...	1	10
" 90 to 100 " . .	...	...	1	...	...	...	...	...	...	...	...	...	1
" 100 to 110 " . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Male	68	60	63	51	72	44	47	60	43	53	29	41	631
Female	64	48	74	59	72	33	50	69	40	71	52	64	696
Monthly totals . . .	132	108	137	110	144	77	97	129	83	124	81	105	...
Quarterly totals . . .	377			331			309			310			1327

From diseases peculiar to the nervous system, there have been 1866 deaths for the year, equal to 18.90 per cent. of the whole mortality.

In this class of diseases are embraced a large proportion of children. Of the four diseases numbering the highest in the record, viz: congestion of the brain, convulsions, dropsy of the brain, and inflammation of the brain, amounting in the aggregate to 1343; twelve hundred and nineteen were in children, equal to 65.28 per cent. of the mortality from diseases of this class. Convulsions alone make up nearly one-third of all the deaths, or 32.63 per cent.

The deaths from diseases of the organs of nutrition, number 2196, or 22.35 per cent. of the entire annual mortality. This total shows a considerable abatement compared with those for 1854, amounting to 1081, or 32.75 per cent.

This unusual reduction will at once be attributed to the almost entire absence of cholera asphyxia from our city during the past summer, as well as to the falling off in the deaths from cholera infantum, cholera morbus, diarrhœa and dysentery, amounting in the aggregate to 1037.

The diseases of the urino-genital system have amounted to 148. Of these, 84, or more than one-half, perished as follows: From puerperal fever, 41; puerperal convulsions, 15; hemorrhage from uterus, 13; inflammation of uterus, 8; childbed, 2; puerperal mania, 2; rupture of the uterus, 3.

The deaths from fevers, amounted to 628, or 6.30 per cent. of the mortality.

The deaths from scarlet fever were 163.

That period of life most favorable to an attack of scarlet fever, appears to have been between two and five years. One hundred and fifty of the deaths were under ten, and only one over twenty years of age.

A large increase of deaths from scarlet fever took place during the fourth quarter of the year, running up from 26 to 66, nearly treble those for the third quarter.

The deaths from fevers in 1855, have been less by 12.35 per cent. than for the five previous years.

Three deaths from yellow fever were recorded, all of which were in individuals who contracted the disease in Norfolk, Va.

Smallpox has contributed 281 deaths, and varioloid 24, in all 305, to make up the annual mortality. This is an increase over those for 1854 of 76.30 per cent.

Infancy suffered severely; of those under ten years of age it carried off 221, equal to 72.45 per cent. Eighty-eight of these deaths, or 28.85 per cent. of the whole number, were between 2 and 5 years, and fifty-eight, or 19.01 per cent. were under one year of age.

The excess of deaths was with the males, to the amount of 13.11 per cent.

The writer has no hesitancy in ascribing the large mortality from smallpox among children to the absence of a more general extension of vaccination, and would remind the Society of the recommendation of the Committee on Gratuitous Vaccination of the Poor, in a report made to the State Society at its session in May, 1854,* and ask that the same be faithfully carried out, as the best means for securing the end proposed therein.

The following table gives the annual aggregates for those diseases, casualties, &c., which have been most fatal during the year. No disease is named that did not exceed ninety in number.

	1855.
Apoplexy	110
Casualties	102
Cholera infantum	566
Consumption of the lungs	1,327
Congestion of the brain	175
Convulsions	626
Croup	265
Debility	393
Diarrhœa	177
Disease of the brain	97
" heart	170
Dropsy	136
" of the brain	254
Dysentery	266
Fever, scarlet	163
" typhoid	231
Hooping cough	90
Inanition	104
Inflammation of the brain	288
" bronchi	233
" lungs	442
" stomach and bowels	187
Marasmus	436
Old age	173
Palsy	106
Smallpox	281
Stillborn	588
Unknown	220

The annexed table will exhibit the deaths, with the sexes, for each month in the year, and the number at sixteen distinct periods of life—with the stillborn for each month, and their sexes. Of the 588 stillborn

* See Transactions of Medical Society of State of Pennsylvania, 1854, vol. iv. p. 10.

children, 336 were males and 252 females, showing an excess of males equal to 14.29 per cent. or more than double the excess of mortality in the male sex, at any decennial period of life.

Infantile mortality is largely represented in this table. Of the whole number of deaths, 3,245, or 31 per cent. were under one year of age; of these 588 were stillborn. The deaths previous to the fifth year amounted to 5,280, or 50.48 per cent. and before the twentieth year 6,146, or 58.76 per cent.

Of the deaths under five, amounting to 4,692 (exclusive of stillborn), there were 2,642, or 56 per cent. : a large majority of these took place in the summer and autumn months of July, August, and September, a period of the year peculiarly fatal to children.

From the first period of life (under one year), up to the fifth, 10 to 15, the deaths gradually decline. From this period they begin to increase, until they reach the seventh period, 20 to 30, when they fall off again gradually, up to the sixteenth, 110 to 120. Forty-nine, or 0.47 per cent. of the deaths were beyond ninety, six were between 100 and 110, and one was over 115 years of age.

The greatest number of deaths for any month was in August, 1,456; the next highest was in July, 1,112. The lowest monthly mortality was in June, only 696; equal to 23 per day.

The Deaths, with the Sexes, for each Month in the Year, and the Number at Sixteen distinct Periods of Life—with the Stillborn Children for each Month, and their Sex.

MONTHS.	Males.	Females.	STILLBORN.			Under 1 year.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	110 to 120.	Total.
			M.	F.	Total.																	
January . . .	450	417	31	21	52	228	81	69	22	20	24	120	85	51	52	47	40	21	7	...	...	867
February	387	380	16	20	36	225	83	75	26	11	17	89	70	34	31	55	29	15	7	...	...	767
March	481	411	30	14	44	234	85	82	43	13	34	107	76	55	47	48	45	18	5	...	...	892
April	398	371	27	15	42	199	69	76	33	12	16	86	69	70	53	41	28	16	1	...	...	769
May	491	418	24	24	48	231	81	81	42	13	29	108	83	61	57	44	50	24	3	1	1	909
June	379	317	33	27	60	232	46	55	36	10	18	59	59	51	41	33	36	16	3	1	...	696
July	595	517	30	24	54	507	120	64	32	15	29	76	81	54	52	40	25	13	4	...	...	1112
August	774	682	27	19	46	559	247	101	32	22	37	115	118	72	48	41	40	19	4	1	...	1456
September . . .	440	378	26	18	44	248	116	80	33	12	23	83	61	55	27	35	25	13	6	1	...	818
October	468	399	37	22	59	238	58	92	37	9	34	85	101	64	41	54	35	17	...	2	...	867
November . . .	312	275	31	25	56	171	49	62	29	8	21	65	62	40	39	21	13	5	2	...	...	587
December . . .	370	347	24	23	47	175	59	102	40	11	23	72	65	42	49	34	24	14	7	...	...	717
Totals . . .	5545	4912	336	252	588	3247	1094	939	405	156	305	1065	920	659	537	493	390	191	49	6	1	10457

III. PREVALENT DISEASES.

In keeping with the recommendation of the State Society, we furnish under the third general head some account of the prevailing diseases of Philadelphia City and County, during the year 1855.

No epidemic of widespread prevalence, malignant or unmanageable in its character, has appeared in our midst. Even the cholera influence which had been felt during several preceding summers, had so entirely disappeared as to have been scarcely observed. The mortuary record furnishing only 2 deaths from cholera asphyxia, and 31 from cholera the entire year. Nor has there been noticed any peculiarity in the type of the ordinary diseases of the four seasons.

It may be proper, however, to refer to the occurrence of influenza in a limited degree, and for a brief period in the early part of the year, as also to the appearance towards its close of smallpox and varioloid, which, at the time of preparing this report (March, 1856) are still prevailing.

Without an exception, the few practitioners who have kindly responded to the circular of the Committee, concur fully in opinion with the writer, that we have passed through a remarkably healthy year. An evidence of this is furnished from the fact, that according to the returns made to the Health Office, the mortality has been less by 1326, or 5.96 per cent. than that of 1854.

Dr. William Gallaher, residing in the 24th ward, says: "I have been in active and I may say in extensive practice most of the time, in the city and county for the last twenty years, and during that long period, I have never known so much general health as during the year 1855." Dr. Lawrence Turnbull, of the 7th ward, furnishes similar testimony, that "the last year has been one long to be remembered for its almost entire freedom from epidemic diseases, and for the general good health which has prevailed."

Dr. Arnold Naudain, of the 14th ward, observes, that "so far as my observation extends, the past year has been one of more than usual healthfulness, and the diseases generally of a mild character, readily yielding to well-directed treatment."

More or less apprehension had been expressed by a few alarmists, for some time prior to the advent of the hot season, that the yellow fever might visit us. These fears, however, were not realized. While the ill-fated cities of Norfolk and Portsmouth were decimated, our own, with those intermediate, although there was constant intercourse between them by travel, escaped its fearful ravages.

It should not be forgotten, however, that five cases of yellow fever were reported to the Board of Health, as having occurred in our city,

three of which died, while the fourth and fifth recovered. In all these individuals, the disease was contracted in Norfolk, and although there had been free communication between them and their friends in the city, not an instance is known of the fever having spread to others.

Fevers.—Of the ordinary types of autumnal fevers, the intermittent and remittent have been more frequently observed than for several preceding years. In some districts, they appear to have been more common than throughout the city generally. The physicians practising in those neighborhoods distinguished during the past season for the prevalence of paludal fevers, have invariably ascribed them to the morbific exhalations arising from the decomposition of animal and vegetable substances contained in the stagnant ponds of water in the vicinity, or in the neighboring marshes. Dr. Edgar Janvier, a practitioner in the 19th ward, and residing at Richmond on the Delaware, does not hesitate to say: "We had an endemic of intermittent, remittent, and continued fevers, commencing about the 1st of August and continuing for three months. Its principal locality was a badly drained meadow on the Delaware above the Reading Railroad Co.'s wharves. The mud and filth lay festering beneath the sun, producing a stench that was horrible to smell, and infecting the household of every one in the vicinity. This meadow is skirted by houses, mostly of the laboring classes, and not one escaped. Some had ague alone; some remittent, and others the continued form, which were followed, in three or four weeks, by the most obstinate ague it has ever been my lot to treat. I found it impossible in some instances to stop it, without removing the patient altogether from the locality. This endemic (in its violence) was confined strictly to this locality. I reside two squares below the meadow, and about four from the river, and scarce any in my square suffered at all. The intervening space is closely and compactly built, showing that we owed our immunity solely to that cause."

Dr. A. Nebinger, residing in the 2d ward, which is located in the southern section of the city, whose "practice is spread over a large range of territory, embracing both city and rural districts," has prepared an elaborate sketch of his professional experience for the year, and when treating of fevers informs the Committee that

"*Remittent and intermittent fevers* have been of very frequent occurrence in my practice during the autumnal and winter months, and so universally diffused that I regarded them as endemic. I have not kept any record of the number of cases that I treated, but would set down, as an approximate number, eighty cases. Many of these were very mild and tractable, readily and rapidly yielding to treatment. The remittents, in several instances, assumed a typhus type, and ran into a duration of several weeks; the patients thus afflicted, ultimately recovering, after long and tedious convalescences.

"These fevers made their appearance early in the fall, and continued to the close of December. This late, or prolonged continuance depending, doubtlessly, on the extraordinary mildness of the weather, the limited amount of frost, and the great quantity of rain which fell during December.

"The general or endemic prevalence of these fevers in the southern portion of the city, may, I think, be fairly attributed *principally* to *two causes:* First. In the early part of May, 1855, a portion of the earthen bank that has been thrown up to prevent the water of the Delaware River from flowing over all that reclaimed land south of the city, known as the neck, or meadow lands, was washed away, and before the break could be repaired, the whole of the neck referred to, embracing an area of several miles, became inundated. The highways and lanes, which divide and intersect the district of country referred to, were so far submerged, that they were impassable, and the residents were compelled in quitting their homes, and in going from one to another point, to traverse the distance in boats. This inundation continued for three weeks, when, the bank being repaired, the water was slowly drained off by the creeks and ditches. From this overflowing of the lowlands, like the inundations by the Nile, a most extraordinary, but rank growth of grass, weeds, &c., resulted; large quantities of which, dying, and remaining upon the ground, afforded, by the combined action of the solar heat and moisture, abundant material for the generation of miasm or malaria.

The second and other cause to which I have referred, as being principally operative in the production of these miasmatic diseases, are the efforts that are being made by capitalists and land owners, by the construction of bulkheads, or wharves, to reclaim and render available a vast amount of the marsh, commencing immediately south of the Navy Yard. The effect is, to cause large deposits of vegetable and earthy matter, which, as the tide ebbs, in consequence of the obstruction offered by the bulkheads, cannot be swept out into the current of the stream. This collection of vegetable matter, being subjected to those conditions promotive of its speedy decomposition, soon undergoes decay, and sends forth its gases to poison the atmosphere of the localities for miles around. Without going farther, I think we may find in the inundation of the meadows, ample cause for the production and general diffusion, over the southern section of the city, of the remittent and intermittent fevers which prevailed during August, September, October, November and December of 1855."

Dr. Wm. T. Taylor, a practitioner in the Twentieth Ward, formerly Penn District, in the northwestern section of the built portion of the city, writes to the Committee that

"The autumnal fevers began to appear in my neighborhood as early as June. Their premature arrival was, probably, owing to the exten-

sive ponds of stagnant and putrid water, in combination with a large amount of decomposing animal and vegetable substances floating upon the surface, and encircling the wide and muddy margins of numerous vacant lots. These places were so very offensive, that it was almost impossible to pass them without being sickened with the vile exhalations arising therefrom. They were located between Twelfth and Broad Streets, north of Thompson. Many persons residing in the immediate vicinity, were taken sick with intermittent and remittent fevers, and some of the cases assumed a typhoid form. Many families removed from this locality, in order to escape the pest occasioned by the poisoned atmosphere of these lots, which was not abated until the Board of Health filled them up."

"Intermittent fever," says Dr. W. B. Atkinson, of the Fifth Ward, "and its congeners, have prevailed to a much greater extent in my practice, and in that portion of the city where I reside (Spruce near Front Street), than has been known for a very long time. The majority of the cases, however," he continues to say, "originated in New Jersey, and were in many instances quite obstinate."

Dr. J. F. Lamb, located at Frankford, in the Twenty-third Ward, and practising in its rural sections, informs the Committee, that "intermittents and remittents were prevalent during the autumnal months, extending into the winter.

"Most of the last year has been unusually wet, and the prevalent fevers have been much less common in elevated places than in low situations, on the margins of mill-ponds and in low damp locations; where very few families escaped some form of fever; no age, sex, or avocation appeared to have an immunity."

In the treatment of intermittent fever, as it prevailed in and around the populous districts, we have not observed any new feature, beyond the usual method pursued during the pyrexia and apyrexia of disease. The only subject of interest in its treatment that has attracted our attention, is that of the virtues of the several preparations of bark, in their anti-periodical and therapeutical effects.

This important feature in the employment of Peruvian bark, or the salts of its alkalies, as a febrifuge, has, deservedly so, claimed considerable notice, and we avail ourself of a valuable paper read before the College of Physicians in October, 1855, by Dr. Robert P. Thomas, one of its fellows, on the use of sulphate of cinchonia, as a substitute for the sulphate of quinia, by presenting the following synopsis:—

After some brief remarks upon the appearance, solubilities and chemical nature of specimens of quinia, cinchonia and quinidia, the three alkaloids, or the active principles of the Peruvian bark, or cinchonia of the Pharmacopœia, which Dr. Thomas exhibited, he urged the import-

ance, which was becoming daily more apparent, of securing an efficient substitute for the invaluable quinia.

He enforced it, from the fact that, owing to the wasteful and destructive method usually practised for obtaining the calisaya or yellow bark from the western coast of South America, by the indiscriminate felling of all trees within reach, vast sections of country have been stripped without a full development of their resources, and also from the fact, that our National Pharmacopœia recognizes the barks from that coast only, as officinal.

Therefore, "a new and inexhaustible supply of efficient barks will at once be opened to us from the northern coast of South America, if experience shall prove that cinchonia and quinidia approach quinia in virtues."

"Sulphate of quinidia is now being tried extensively, both in this country and abroad."

"Sulphate of cinchonia was tried on a limited scale many years ago, in the hospitals in Europe, but did not attract much attention. Again it is coming into vogue."

"In the year 1852, it was introduced into the Pennsylvania Hospital with a success to warrant more extensive trials."*

"In the two following years, its use was continued by Drs. Pepper and Gerhard, with similar success. The present season they are employing the sulphate of quinidia."†

"In *Ranking's Abstract* for June, 1855, is a statement, that M. Hudellet, physician to the hospital at Bourg, had commenced the use of the sulphate of cinchonia in March, 1853, and since that time quinine has been almost altogether supplanted."

"In the western Clinical Infirmary of this city, it has been used as a tonic in ordinary cases, and as an anti-intermittent in the neuroses of a periodical character, as well as in the common intermittent and remittent fevers; the physicians express much confidence in the anti-periodic properties of the cinchonia."

"At the Philadelphia Hospital, it has been tried, with much benefit, in a large number of cases of disease of malarious origin."

"At the Philadelphia Dispensary, a fair trial has been given it" in 102 cases. The formula for administering the sulphate of cinchonia is the following:—

℞.—Cinchoniæ sulphatis grs. xxxij;
Tinct. ferri chloridi f℥ss;
Aquæ f℥iv.

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* See Dr. Pepper's paper, January, 1853. Am. Journ. Med. Sciences.

† See Med. Exam., September, 1854.

Sig. Dose, one to three teaspoonfuls, *pro re natâ*. "We order," says Dr. George Martin, "two ounces of the above mixture, and direct the whole to be taken in divided doses before the anticipated paroxysm."

"Of the 102 cases, fifty-four were absolutely cured, having no return of the chill. Twenty-five are reported as not heard from again (supposed cured). In twenty-three the chill recurred."

One striking fact is exhibited: "In no single instance did the disease prove rebellious, when the patient took larger quantities of the cinchonia, and for a longer period. Every case of relapse was speedily cured by the same remedy."

"In the seventy-nine cases without relapse (this includes those not heard from) the average taken by each patient was 24½ grains. In the twenty-three with return of chill, 70 grains." The 102 cases averaged 35 grains each.

At the Northern Dispensary, Dr. Slocum has treated, by this article, seventy-six cases in four months. Not one is now under care, all supposed to have been permanently cured. His formula was :—

℞.—Cinchoniæ sulphatis ʒss;
Acid. sulphuricum aromat. gtt. xl;
Aquæ fʒviij.
M.

Dose, a tablespoonful (2 grains) every hour in the early part of the morning of the day of the expected chill; and for four or five successive days the same quantity three times a day.

Dr. Thomas, in his paper before the college says: "I have uniformly employed the cinchonia for a twelvemonth past, and in no one instance has the chill returned." His formula is in pills, as follows :—

℞.—Cinchoniæ sulphatis grs. xx;
Ac. sulph. aromat. gtt. vj;
Ext. piperis, fl., gtt. x.
Misc. et ft. pilul. No. xx.

Dose, two pills every hour in the morning of the day of the chill until 8 or 10 grs. are taken. The next day half the quantity (in a tertian), and on the third, the remainder. After which he directs the patient to take six on the mornings of the 8th, 15th, and 21st or 22d days. This article, Dr. Thomas says, and it is confirmed by others, does not produce distress in the head or ringing in the ears.

At the same meeting of the college, Dr. Casper Morris added his testimony to that of Dr. Thomas, of the value of sulphate of cinchonia as an antiperiodic; he "had been very successful in private practice with it, and had not observed that it produced the tinnitus, deafness, and other head symptoms occasioned by quinia."

In the treatment of intermittent fever Dr. Turnbull, of the 7th ward, has made use of the sulphate of cinchonia, but does not indorse the favorable opinion of its qualities as a substitute for sulphate of quinine. He thus remarks: "The form of fever which has prevailed in this location has been intermittent; and a few cases of remittent having come under my notice, I was induced to try, but not with satisfactory results, the sulphate of cinchonia as a substitute for sulphate of quinine. It induced so much pain and uncomfortable feeling in one case, that I had to give the quinine afterwards. In several cases of intermittent fever, even in large doses, it did not prevent the return of the paroxysm; so that I got discredit for not curing them. As a tonic in one grain doses, three times a day, I have employed it in my own case, and that of several patients, with much satisfaction; but as an anti-periodic, I prefer the sulphate of quinine.

Dr. Isaac Comly, of Byberry, in the 23d ward, gives a very satisfactory report of sulphate of cinchonia, and says: "I believe it to be equally efficacious with sulphate of quinine, if double the quantity be used."

Dr. Wm. B. Atkinson, on the other hand, has a high opinion of quinoidine, but draws no comparison between it and sulphate of quinine, for he writes: "I have found quinoidine very efficacious in all fevers of a periodical nature; whether used in the pilular form, or dissolved in sulphuric or acetic acid; from sixteen to twenty grains generally sufficed. It being much cheaper than other articles of a like nature, is destined to come into general use for those diseases, and especially in eleemosynary institutions."

Dr. A. Nebinger speaks in favorable terms of the cinchonia sulphas, for he writes: "In intermittent fever I have used it in three grain doses, repeated every second hour during the intermission; and have found it quite as useful, certain and reliable as sulphate of quinine, in preventing a return of the paroxysm. I have seldom found it necessary to give more than thirty-six grains to arrest a tertian."

From all that has been related of the value of the sulphate of cinchonia as an antiperiodic, and as a curative remedy in fevers, and as far as the experience of the writer goes in its favor, we are confirmed in our opinion that its merits have not been sufficiently investigated, and that in it we possess an important remedial agent, and valuable substitute for sulphate of quinine. Moreover, its cheapness, other things being equal, will make it a favorite with public institutions.

The comparative virtues of the alkaloids, quinia, cinchonia, and quinidia, as antiperiodics in intermittent fevers, and as therapeutic agents in all miasmatic fevers, is still an undecided question. Nor is the assent of the profession fully given, that the quinoidine does not possess equal antiperiodic properties with either of the above sulphates. It is

a subject, however, of deep practical interest with the profession, and we hope that those who possess opportunities will give it their attention.

For an excellent article on the use of quinoidine in the treatment of intermittent fever, we refer the Society to the May No. of the *Am. Journ. of Med. Sciences*, 1855, p. 295, by Dr. J. Da Costa, and also to the January No. of the same Journal, 1855, p. 81, for the treatment of 180 cases of intermittent fever in the Philadelphia Hospital, with quinoidine, by Dr. J. S. D. Cullen, one of the resident physicians; also to the Dec. No. of the *Med. Examiner*, p. 740, 1854, by the late Dr. Geo. L. Upshur, of Norfolk, Va., as well as to Dr. Pepper's papers in the *Amer. Journ. of Med. Sciences*, for January, 1853, and *Med. Exam.*, Sept. 1854, together with the paper of Dr. Thomas, contained in vol. 2, No. 9, new series, of the *Quarterly Summary of the College of Physicians*, and from which we have quoted largely. In all of these articles, the writers contend for the value of the several preparations of bark in fevers, but none have gone into an examination of their comparative merits, nor, as yet, do we know of any such investigation having been instituted, desirable as it is, in order to set at rest a question of interest, both in a scientific and pecuniary aspect.

In the treatment of fevers generally, the following information has come to the notice of the Committee.

Dr. Edgar Janvier tells us, that his fever cases "were all attended with great prostration, and would not bear much depletion of any kind. They were a long time recovering strength after the fever was broken. Four adults died under my care, after a few days' sickness apparently from prostration, without any sensible local lesion. They were of broken-down constitutions, occurred in the commencement of the season, and were all the deaths I had." Again, he says: "My treatment was by every means (with as little depletion as possible) to promote a crisis. If I could not secure an intermission, I availed myself of the first remission, to give some preparation of Peruvian bark, and generally was satisfied with the result. I did not bleed a single case: some I had to cup before I could command the tendency to the brain. In most cases, I found it expedient to use mild emetics as well as purgatives at the commencement, and mercurials were always combined with the latter with the best results. I did not, however, employ them for their specific action; for when I produced even incipient salivation, convalescence was protracted."

Dr. Wm. T. Taylor says, in his answer to the Committee: "My treatment in intermittent and remittent fevers, was, to evacuate the alimentary canal by the use of calomel and jalap, or a blue pill of five grains, followed by the citrate of magnesia; local congestions were removed by

cups; when the stomach was irritable, I found the application of leeches over the epigastric region to afford relief, aided by the neutral mixture or effervescing draught. So soon as an intermission occurred, I threw in sulphate of quinine freely to prevent a return of the febrile paroxysm. From 20 to 40 grains were generally sufficient."

Dr. Lamb's cases of fever were "mild, and controlled with facility, except in some tertian and quartan intermittents, which proved extremely obstinate in their tendency to reappear, at an interval of ten days. The sulphate of quinine could in my practice be relied on; but here it seemed inadequate to prevent the periodical return, in what may properly be called the longer period." For this purpose, he "found nothing more effectual than the extract of cinchona, given in doses of two or three grains several times a day, and continued for weeks. In the cases where the remedy seemed most promptly and permanently efficacious, it usually acted as a cathartic. In obstinate cases, some mercurial evacuant was necessary in the early stages, and often during the progress of treatment."

In his treatment of remittent fever, Dr. Nebinger found its termination hastened "after freely and completely unloading the alimentary canal by the use of calomel and a saline purgative, to administer potassa citr. mixture, a few grains of blue pill daily, sponging the face, arms, &c., with cold water, and giving the sulphate of quinine as soon as the remission became sufficiently decided to offer an opportunity for its admission, with the hope of producing its antiperiodic effect." Of intermittents as well as of remittents, he says: "I give daily a few grains of blue pill for the purpose of exciting the liver to healthy action; and feel confident that unless the important functions of this organ be properly performed, the paroxysms of fever will only be interrupted, and in a short time there will be a recurrence, which would not have been the case if the secretions of the liver had been normal in quantity and in quality."

"The most prevalent disease in my practice," writes Dr. Isaac Comly, "during the year, has been intermittent fever. It commenced about the 1st of the 8th, continued until the 12th month, and was of the quotidian and tertian types. The treatment, where there was indication of derangement of stomach and bowels in the intermission, was, to give a cathartic before using an anti-intermittent. Where no such indication existed, I resorted at once to sulphate of quinine or sulphate of cinchonia, giving 10 grs. of the former, or 15 or 20 grs. of the latter in divided doses, so as to make an impression on the system as early as possible in the intermission. This plan generally arrested the paroxysms, but the disease was disposed to return on the 7th, 14th, and 21st days after. With the view of eradicating it, I directed one of the above articles on the 6th, 13th, and 20th

days, thus anticipating the attack and often removing the disease effectually."

Dr. Gallaher, in alluding to the intermittent and remittent forms of fever, holds the following sentiments:—

"As respects the treatment of these fevers, I have not much to say differing from the usual practice recommended by our books, and yet in the complicated intermittents we so frequently meet with, and which approximate so closely to the remittent forms of fever, there is a point in the treatment which deserves attention.

"I refer to the too great apprehension of danger that some physicians have, in the use of tonics (quinine for example) in the early stage of the disease, before, as they say, the disease is fully developed, or a complete intermission of the fever has been obtained.

"Every experienced physician knows full well the danger, as well as the general tendency there is, in this class of diseases, if suffered to continue for any length of time unchecked, to assume the nervous or typhoid form. This, no doubt, will be the result of many cases in spite of all that can be done to avoid it, yet I am very certain that the majority of cases can be saved from such a termination, and be completely checked in a few days, by the free and early use of quinine.

"My practice is to resort to quinine the moment I discover any abatement of the fever, or any period of intermission, however short, even if not complete, during the twenty-four hours. In the great majority of cases, I am able by this course to check the disposition to chill, which ever accompanies this form of fever. The chill, or even the disposition to this stage of the paroxysm, being once completely broken up, the fever usually yields readily, and but very seldom gives any further trouble.

"I am aware, that unless great care is taken in administering the quinine at this early stage of the disease, there is danger of producing the very result we so earnestly desire to avoid. No doubt this is sometimes the case in complicated cases, but may be prevented by proper discrimination, and examination into the existing symptoms.

"I am confident, that more injury is generally experienced by deferring the use of the quinine in these cases too long, than by its too early use; experience, perhaps, alone will enable us suitably to determine the question."

At a late meeting of the College of Physicians, Dr. Jackson (formerly of Northumberland), in some remarks upon the use of quinine in fevers, referred to the custom of waiting until four hours before the return of the expected paroxysm, in order to administer it, which he considered bad practice. The old and true method, he said, was to begin, in

quotidians, as soon as possible after the cessation of the paroxysm, and in tertians upon the intervening well day. Quinine, he thought, did not sometimes produce its full effects for twenty-four hours, and if given as above proposed, the next paroxysm might possibly occur, but none afterwards.

Typhus and Typhoid Fevers.—Typhoidal or continued fevers have of late years been increasingly prevalent in our city. They now constitute the leading type of our fevers. Within the year under review, there have been recorded 290 deaths from typhoidal fevers, as follows: Typhoid, 231; typhus, 59; nervous, 2; continued, 1; amounting in all to $2\frac{3}{4}$ per cent. of the annual mortality. Of those who died from these fevers, 122, or 42 per cent. were between 15 and 30 years of age, and 40 were in children under 15. Eighty-nine of the deaths occurred within the fourth quarter of the year.

That form or type of fever described by Louis, Chomel, Gerhard, and others as typhoid or enteric, to distinguish it from its congeners, is the one most commonly designated. But from the loose manner in which the term is applied, the blending of the various types, and the want of a correct diagnosis to establish the specific character of the disease, we are not without our fears that this careless habit may lead to a mere name-serving distinction, rather than to a precise and accurate diagnosis, drawn from the nature of the symptoms.

It is neither, however, any part of our duty, nor is it the place if we had the time and ability, to investigate the proximate cause, the pathological distinctions, complications, and lesions which characterize this class of fevers, for the purpose of arriving at a correct and rational theory of its mysterious nature. It is a subject full of interest both in its etiological and pathological relations, and every way worthy the highest aspirations of the best talent in our profession.

Typhus or ship fever has been limited in its prevalence during the year; and as it has generally been confined to recently-arrived immigrants, the great falling off in this class of our foreign population, would account in some degree for its circumscribed mortality.

Variola and Varioloid, according to the mortuary record, has swept off 281 of the population during the year, an increase of 70 per cent. over those for 1854, and is one of the few instances on the annual record, in which the mortality from any one disease, rated higher than in the preceding year, running up from 40 to 281.

A careful examination of the death tables for our city since 1804 will indicate that an epidemic law of periodicity, as suggested by Prof. S.

Jackson,* may not be altogether unauthorized, especially when this inference is borne out by the records of other large cities.

The following table will show that since 1844, at periods varying from three to four years, the epidemic influence of smallpox has been obvious; and Dr. Jackson is of opinion that this epidemic periodicity is observed on an average for two years, with intervals of from three to six years :—

Year.	Smallpox.	Year.	Smallpox.	Year.	Smallpox.
1844	17	1848	100	1852	426
1845	190	1849	152	1853	52
1846	251	1850	40	1854	40
1847	9	1851	216	1855	280

Towards the close of 1855, smallpox, many cases of which had been observed and recorded throughout the year, began to spread with considerable rapidity, until it assumed an epidemic aspect. No section of the built portions of our city has been exempt from its inroads. All classes and conditions of the population have suffered, whilst it has been noticed, and the health-office record will confirm the observation, that infancy and childhood have been peculiarly exposed to its ravages.†

This liability in the young of our city to the disease is, to some extent at least, attributable to the neglect of public vaccination, the result of a modification of the health ordinance in 1854, dispensing with the services of collectors of vaccine cases, by which thousands of the offspring of the poor were left, unprotected, to the mercy of the epidemic, who otherwise would have been spared the infliction of this loathsome pest.‡

Whatever may have been the cruel and inhuman opposition raised from time to time against the usefulness of vaccination; or, however bitter the prejudices that are wickedly instilled into the public mind, by its enemies; or, however unwise the promulgation of new and doubtful doctrines by worthy members of our profession, calculated to cause misgivings as to the virtue of a "widely adopted and long cherished blessing,"§ we do not hesitate to proclaim, that our confidence, and we are happy to say, the confidence of the profession, in vaccination as a prophylactic, is undiminished. In the positive language of our late president, Dr. Condie, to be found in the Society's report for last year,

* Proceedings of Medical Society of Pennsylvania, 1850.

† At the time of preparing this report, March, 1856, the deaths from smallpox from January 1st, numbered more than 228, although the progress of the disease was somewhat abated.

‡ The appointment of collectors of vaccine cases has since been reinstated in the ordinance.

§ Med. Exam., vol. xii. p. 5.

which will bear repetition, and in which is summed up the whole matter, our confidence, like his own, is rather increased than diminished. For he says: "In the great majority of those carefully vaccinated with genuine and recent matter, I have found a perfect immunity to exist to the infection of smallpox under every degree of exposure; in other instances, however, the susceptibility to smallpox is not extinguished by a single vaccination, however carefully performed, and with the purest and freshest virus. In many instances, it has been only after vaccination had been repeated several times, at varying intervals, that I have felt assured the full effects of the vaccine impression were induced. Hence the importance, to insure full protection to the system, of revaccination being resorted to, whenever the slightest danger exists of exposure to the contagion of smallpox."

On the certainty of vaccination as a prophylactic against smallpox, Dr. Edgar Janvier, in responding to the circular of the Committee, entertains the following sentiment: "I have held the appointment of vaccine physician during several years, and do not recollect more than three or four cases of very mild varioloid, occurring after my public or private vaccinations. *Almost always* a vaccinated person possesses an entire immunity even from that."

Dr. Nebinger writes: "I have practised vaccination extensively, and have the most unbounded confidence in its protective influence against smallpox."

In Dr. Lamb's response to the Committee, he refers to the prevalence of smallpox, but says with an air of triumph: "Yet I am bound to admit, that not one case has occurred in my practice," and then interrogates the unbeliever: "Can it be owing to the fact that vaccination is admitted and attended to, in *all* the families under my care?"

Dr. Janvier cites the following strikingly illustrative case of the prophylactic virtue of vaccination: "Last spring, I attended an old lady of sixty-four years, with natural smallpox, in Sorrel Street (Nineteenth Ward), a loathsome confluent case. The young woman who nursed her, day and night, had never been vaccinated. My first attempt to insert the matter in the arm of this young woman was unsuccessful; but on the second trial, a week after the eruption had come out on the old lady, the vaccination took finely. She had a very sore arm, but to this date (January 30), not the slightest symptom of smallpox or varioloid has occurred." Dr. Janvier further says, that "so well was the neighborhood protected by vaccination, that the disease could not propagate itself."

The following highly interesting and profitable instance of the protective power of vaccination, and the remarkable case of smallpox, exhibiting clearly the great danger of neglecting this prophylactic,

which occurred recently in the practice of the writer, are both so pertinent, that we cannot forbear the opportunity of recording them.

E. W., aged 17 years, the daughter of W. W., together with a younger sister, aged six years, and their brother aged 19 years, had never been vaccinated.

On the 18th of February, 1856, I was called to see E., whom I found covered with an eruption, which I had no hesitation in pronouncing distinct smallpox. It was the second day of its appearance. On the same day, after gaining the reluctant consent of the parents, but only to gratify my earnest and persevering desire, as they were thoroughly imbued with prejudices adverse to its benefits, I vaccinated the sister, who had slept with E. up to the present time. Her vaccination succeeded beautifully. The brother, however, obstinately refused the proffered blessing, although specially informed of the imminent danger he incurred.

On the 5th of March, sixteen days after I was called to attend his sister, who was now convalescing from the disease, this young man sickened with fever. The smallpox eruption appeared on the 8th, assumed a confluent form, and on the 18th he died.

The younger sister, who, during the whole period, had been constantly with these two cases, escaped entirely, and up to the time of printing this report, has enjoyed an entire immunity from both smallpox and varioloid.

These instances, however, of which we could furnish others, are only reiterations of numerous well established facts, that are constantly occurring.

Of smallpox, Dr. Nebinger says: "From August to December inclusive, I treated twenty-seven cases of varioloid, all of which have recovered. Of variola, I have treated forty-three cases, of these three died. The fatal cases occurred in children of the respective ages of nine months, four and eight years. The babe died as the eruption was becoming pustular, and the other two children, who had confluent smallpox, I feel confident, died in consequence of not being able to take a sufficiency of food, to support their little systems during the pustular and desiccating stages of the disease. Of all the cases of variola that I met, there were but four who had been vaccinated; two of these were adult females, one adult male, and a boy seven years of age. In each of these, the pit or vaccination cicatrix was small and not very decided."

Dr. Turnbull writes: "My cases of variola and varioloid have been unusually numerous. In the southwestern section of our city, there have occurred within the area of three squares, from thirty to forty cases. Of this number, I visited fifteen cases; six of them genuine smallpox, and nine varioloid. All these recovered, and none of the smallpox cases

were marked. The first case I had was on the first of February, a girl aged three years, who had never been vaccinated."

For the treatment of smallpox, we can only recommend that the cooling regimen be observed, and local congestions be suppressed, without reference to any hypothesis, as regards the exanthematous character of the disease. The following well drawn up and rather novel plan of treating smallpox we give place to, from Dr. Nebinger, without, however, indorsing his peculiar views of a generous diet under all circumstances.

"Much of the smallpox that I saw during Oct., Nov., and December, was of the confluent, and semi-confluent types, positively bad and exhausting, requiring for the comfort and safety of the patients, a supporting and decidedly nutritious diet; large quantities of which had to be given from the period the eruption became vesicular. My experience is, that of all the patients who were *severely afflicted* with this loathsome disease, those who took *very large quantities* of *nutriment, suffered the least and had more speedy convalescence.* Nor is this my experience of bad cases in 1855 alone. I have found it successful in other periods, when smallpox has prevailed epidemically in Philadelphia. I have my fears that in smallpox, the *abstinence treatment* is often carried too far. By the abstinence treatment I mean that dietetic regimen, by which the patient is not permitted to take a large quantity of such articles of food, as abound in the *proteine* elements, out of which the digestive apparatus is able to combine such of them, as will best produce for the blood a pabulum so constituted, as to respond to the exalted and urgent demands of an impoverished system. My practice has been in all cases of smallpox, during the initiatory, or febrile, and papular stages of the disease, to prescribe an antiphlogistic medicinal and dietetic treatment; but to abandon this form of treatment, as soon as the papules begin to take upon themselves the vesicular form, and then commence a treatment which in all its essentials shall be supporting. In carrying out this treatment, I have found no diet so useful, so grateful to the patient, or that gave less inconvenience to swallow when the mouth, fauces and throat were studded with pustules, as a combination of eggs, milk, sugar and ice; made in the proportion of one egg well beaten, a quantity of sugar suited to the patient's taste, and half a pint of milk; to be taken cold. When the necessity for stimuli existed, as it does in all cases of confluent smallpox, I have added brandy, or what I think better, Monongahela whiskey, because for purity, it can be more safely relied on, and can be more easily obtained. I have now four patients, adult males, who are convalescing from very severe and exhausting attacks of confluent smallpox, each of whom, during several consecutive twenty-four hours, took as many as twelve eggs, and from

two to three quarts of good new milk; and yet with all this supporting diet, this most excellent proteine or highly nitrogenized food, these poor fellows barely escaped sinking into the grave, each of them having had, for two days (notwithstanding they were so vigorously supported with food), that peculiar tremor which is always the unmistakable evidence of a breaking up of the vital forces. Now I ask, if with all this *excessive nutritive treatment*, and which I would dignify with the appellation of *compensative nutritive treatment*, these patients barely survived the wasting effects of the disease; what would have been the result if, as is too often the case, their diet had consisted of a little toast and tea, a small quantity of animal broths, or a boiled egg or two during the day? I have no hesitancy in answering, that instead of the pleasure of granting them clean bills of health, and restoring them to their families and friends, I should have written for them, passports to the grave. I have thus written in regard to the diet in *severe* smallpox cases, because I know, from what I have heard and witnessed, that the dietetic regimen in variola is too frequently defective, both in quality and quantity. I would also remark, that in the kind of cases to which I have been referring, I do not restrict patients to eggs and milk, but permit them to use meats, poultry, in short any food abounding largely in the proteine elements, and that I do not only *permit* of their use, but *urge* it upon them, with the assurance, that in such cases to eat is to live, to abstain is to die.

"Before closing my remarks upon smallpox, I cannot withhold making some observations relative to the *secondary fever* of which we have at times heard much, and which is so pointedly and definitely dwelt upon by writers, with the recommendation, that "when it supervenes, an antifebrile medical and antiphlogistic diet must be given to the patient." From this doctrine I must dissent. The secondary fever so called, of smallpox, I always hail as a happy evidence of the well-doing of the patient. It is nothing more nor less than a febrile excitement produced by the irritation, or if you choose, inflammation of the surface of the body by the pustules. While this secondary, or more properly, *irritative fever* continues, I have but little fear for the safety of my patient, for the reason, that it is sthenic in its form, and gives evidence while it continues, that the vital forces are not at a low degree. This condition of system I desire to encourage, maintain and regulate, not destroy; therefore, I ply most diligently and perseveringly my *compensative nutritive treatment*, supplying the blood with the materials necessary to carry on a vigorous and rapid maturation of the pustules, and all the offices of vitality."

Scarlatina.—Both the record of deaths at the Health office, and the

testimony of the profession, furnish abundant proof that this form of eruptive fever has neither been extensively prevalent nor malignant in its character during the year. Only 163 deaths have been furnished by it, an amount not exceeding 1½ per cent. of the annual mortality, and about one-half the mean number of deaths from scarlatina for the seven previous years.

Dr. Janvier says: "I had occasional cases, and they were mild."

Dr. Gallaher, residing in Mantua, writes: "I have seen some cases of scarlatina simplex, and a few of scarlatina anginosa, but there being nothing unusual about them, and easily controlled, any further notice of them I deem unnecessary."

Dr. Naudain informs us, that "but few cases of scarlet fever have fallen under his notice, and they were very mild in their character."

Dr. Turnbull informs us, of having witnessed "but eight cases of scarlatina during the year, and these, although severe, yielded to local and general antiphlogistic treatment."

Dr. William T. Taylor has seen "a few cases of scarlatina in the early part of the year" in his vicinity, 20th ward, and Dr. Comly, of Byberry, 23d ward, says: "I have thought we were remarkably clear of epidemic diseases. I have seen no eruptive disease except a few cases of mild scarlatina and varicella."

The only correspondent who has witnessed scarlatina to any extent, has been Dr. Nebinger, who thinks the disease assumed an epidemic form in his locality, for the last four months of the year. He writes: "I have had under treatment as many as nine cases at one time;" but he goes on to say: "As a whole, the scarlet fever that I met with was much more amenable to treatment than that I have encountered upon previous occasions. This may be in part, or entirely owing to the lesser malignancy of these cases, but my conviction is that I can more justly attribute my greater success to the generous and supporting dietetic regimen which I have adopted, and which was much more sustaining than I ever before made use of in this disease.

"I have encountered three cases of congestive scarlet fever, all of which proved fatal. They were children of the respective ages of eleven, four, and three years. In this form of scarlet fever, I have not had the pleasure of ever seeing any treatment produce the least beneficial effect. To me, this congestive type of the disease has presented the most startling phenomena. Of the three patients referred to, only one of them survived two days after the attack, and one (the oldest) died in the thirtieth hour of her sickness. All of them presented similar symptoms, quick, hurried breathing, rapid small pulse, delirium, partial coma, much sickness of stomach, frequent discharges from the bowels, restlessness, headache, sunken eyes, pinched-up features, con-

tracted alæ nasi, and extreme prostration. In two of these cases, I was permitted to hold an autopsy. I was anxious to see the post-mortem revelations, where death had been so suddenly produced, and where the virulence or malignancy was so exalted as to not only defy its overthrow, but not even to admit of limited palliation. I examined the body of Ellen E., æt. 11, twenty-six hours after her death. I found the spinal cord extremely congested; the sinuses of the dura mater were all engorged with blood, and a general congestion of the brain existed, exceeding anything I had ever witnessed, not even in cases where death had been produced by ordinary congestion of the brain, accompanied with convulsions. The blood was unusually dark, and of more than ordinary fluidity, having much the liquid appearance of the blood of those who die of typhoid fever. The lungs were healthy. The liver was in good condition; the gall-bladder was excessively distended with bile, and there existed an infiltration of bile into the peritoneal covering of the larger portion of the duodenum, which might have been a post-mortem infiltration, but which I am disposed to regard as having been produced before death, by the violent action of the diaphragm and abdominal muscles upon the liver and the excessively-distended gall-bladder, during the violent vomiting with which the little girl had been afflicted. The stomach presented well-marked traces of inflammation; the intestines were healthy, the spleen normal.

"John L., æt. 4, examined twenty-three hours after death. Found the brain and spinal cord excessively congested. Lungs healthy; the heart normal, except that the coronary veins were congested. The stomach presented patches of inflammation; the bowels and spleen were healthy. The blood was of extraordinary darkness, and of remarkable fluidity."

In the treatment of scarlatina, the writer has observed nothing new nor peculiar. Inunction, as recommended originally by Scheenman, has proved exceedingly useful in our hands as a palliative to the burning, husky, and irritated condition of the skin.

Dr. Nebinger recommends the following treatment in those instances of an anginose character. He says: "Where angina existed, and deposits of lymph or false membrane had been made upon the tonsils and other parts of the fauces, I fully cauterized the parts by applying the argenti nit. pencil, after which, say the next day, I commence for the purpose of securing the removal of the slough, and for combating the inflammation of the fauces, as also to promote cleanliness of the throat and mouth, the use of a wash composed of zinci sulphas gr. xxx, creasotum gtt. xij, mel. ℥j, aqua ℥iij. This wash I use myself, and direct the nurse to apply it with a large-sized camel's hair brush to the

affected parts. Patients who are old enough to express their feelings, describe the wash to be very comforting and grateful."

Rubeola.—But few deaths from this eruptive fever have occurred during the year. The record says 24. The writer witnessed a few cases of uncomplicated measles early last spring, scarcely requiring treatment, owing to the mildness of their character.

Dr. Wm. T. Taylor says: "I saw some cases of measles in June, but mild."

Dr. Wm. Gallaher writes: "Measles prevailed in my vicinity to a considerable extent, but unusually mild, and in the majority of cases required but little, if any medical treatment."

Pertussis.—Of hooping-cough, a disease of childhood, 90 have died within the year; of these, 18 died in the 1st quarter; 10 in the 2d quarter; 44 in the 3d quarter, and 18 in the 4th quarter. The increased fatality in the summer and autumn is not a new observation. Eighty-three per cent., or 75 out of all the deaths were under two years of age. Of this disease Dr. Nebinger writes: "I have not been without cases of hooping-cough during the entire year. In the treatment, I have found a combination of calomel, ipecac. and potassa nit. more useful than any other medicament I have ever employed. After the inflammation has been subdued, no fever present, and no cerebral disturbance existing, the second, spasmodic or hooping stage now being developed, I direct the ext. of belladonna to be given morning, noon, and night, and an antispasmodic antacid expectorant mixture, composed of lac. assafœtida, syr. ipecac., and potassæ bicarb., to be given as frequently as the necessity of the patient may indicate. Of the controlling nature of belladonna in this disease, I have seen such surprising results follow its use, that I am led to regard it in the light of a specific. Those who have used it, and have not experienced decidedly beneficial effects, I feel confident, have either not succeeded in obtaining a good article, or have not given it in large enough doses to impress the system; or they may have administered it before the first or inflammatory stage had been fully combated. For belladonna to be useful, it must be given in decided doses, and in the absence of all inflammation of the bronchial mucous membrane, or any cerebral disturbance. In administering belladonna, I prefer the form of powder. My prescription for a child of one year is ℞.—Ext. belladon. gr. iss; magnesia ℈j; saccharum ʒj. M. et ft. chartulas No. xii. Gradually increasing the dose until its peculiar effects, the dilatation of the pupil and scarlet eruption, shall have been produced; which done, the patient,

being fully *belladonized*, must be kept so until the disease, or at least the spasmodic or hooping stage, has been overcome."

Croup.—The steady increase of the deaths from this fatal disease among children in our city, for the last few years, has been a subject of general remark. From 1849 to 1854, they have augmented from 130 to 304. During the last year, however, there has been a falling off of 15 per cent. The number amounting only to 265, equal to 5.19 per cent. of all the deaths under ten years of age, exclusive of stillborn. The deaths from croup were all in children under ten years of age, excepting two. The greatest mortality occurred in February, viz: 35; this was the coldest month in the year, but not the most variable. The deaths among the males exceeded those of the females by seven.

While it may not be proper in this report to inquire into the cause for this increase of croup in our city, we shall be allowed to intrude an opinion as to what we believe is a very common one, beyond those acknowledged by all writers. We agree in sentiment with the generally received theory, that cold and exposure to vicissitudes of temperature combined with moisture, exert a considerable agency in producing the disease; and after thirty years' experience, we are prepared to say that the most fatal and severe forms of croup will be found among those children who are confined to an unventilated nursery during the day, breathing a dry and artificially heated atmosphere, but at night, their little bodies oftentimes bathed in perspiration, they are undressed and transferred suddenly to a low degree of temperature, in a remote chamber, where they are put to bed.

This imprudent management of children, under a false view of tender care-taking, practised as we know it to be by many indulgent and anxious mothers, during the entire infancy of their offspring, seldom if ever affording them the healthful benefit of a daily airing in clear weather, properly dressed, renders them not only delicate, but susceptible of disease upon the least exposure; more especially are they liable to inflammatory catarrhal affections, and particularly to croup.

The large majority of our cases of croup during a long course of practice, have commenced after the children had been put to bed in the evening, and among those families, where this false care during the day to insure their comfort and health, had been observed. The sudden reduction of temperature under such circumstances in a nervous system, rendered irritable by the constant stimulation of excessive heat and an impure atmosphere during the entire day, we consider to be the most frequent cause of this dangerous affection of childhood, and in all probability the true reason for its great increase in our city.

Dr. Wm. T. Taylor says of croup: "It prevailed in my practice dur-

ing the months of January, February, and March. I could generally relieve it by the use of syrup of lobelia, made from the vinegar of lobelia, according to the formula of Mr. Wm. Procter, Jr.; this was usually effectual in causing free emesis, and the effect kept up by small doses of the same article, sometimes with addition of tartrate of antimony. Occasionally calomel and ipecac. in small doses were added to the treatment for their alterative effect."

As a topical application in croup, we recommend with great confidence, the free application of a solution of nitrate of silver, of the strength 30 grains to an ounce of distilled water, to the fauces, and the parts adjacent to the glottis. From this remedy we have witnessed the most decided therapeutic effects, applied by a sponge and curved probang, twice and three times a day. We have never attempted to pass the probang through the rima glottidis down to the bifurcation of the trachea in croup in children; nor do we ever intend to—much less, recommend to others the adoption of so extremely difficult, and by many considered as an impracticable operation, notwithstanding the evidence of Dr. Green, of New York, that it may be done "with as much ease and safety as the catheter is introduced into the bladder."

The free application of leeches to the throat, where the febrile symptoms run high, attended with active inflammation of the larynx, we consider an invaluable aid in subduing the disease.

The emetic of the compound syrup of senega should in no instance of croup be omitted. Calomel as an alterative, and capable of lessening the tendency to, or even removing the membranaceous exudation when formed, is at all times an advisable and judicious remedy.

Pneumonia.—The mortuary record shows that inflammation of the lungs contributed 442 or 4.22 per cent. of the whole number of deaths for the year. More than half of these, or 247, were in children under ten years of age. The winter and spring months gave by far the largest mortality, amounting to 311, equal to 70 per cent. of the whole.

Dr. Nebinger, in reference to pneumonia, says: "The cases that I have seen during the year have been, with two exceptions, frank, sthenic, easily diagnosed, and have yielded generally to local depletion, the use of a combination of calomel, tart. antim., and potassæ nit., together with a strict antiphlogistic diet. I have treated eleven cases of sthenic pneumonia and two of pneumonia typhoides. In these latter cases, although calomel was administered during the first few days after the attack, there was not the slightest evidence manifested of the mercurial impression until the typhoid symptoms began to subside, when the mercurial odor of the breath was noticed. With this evidence, the signs of improvement and the promise of convalescence became the more

decided. Of all my cases, only one proved fatal—a man of feeble constitution, aged 37, whose parents died of pulmonary consumption. Two cases occurred in males of the respective ages of thirty-two and forty-eight years. In neither of these was depletion of any kind practised, and, not being marked with any decided typhoid condition in their onset, they were treated with calomel, tart. antim., and nit. potassæ. This combination of remedies was continued, until typhoid symptoms presented themselves, when stimulants and a supporting diet were administered. The stimulants were ol. terebinth., carb. ammoniæ, and brandy; the diet, milk, egg-nog and animal juices. Under this treatment, both these patients, whose cases were for a time most serious and threatening, had their typhoid symptoms to pass away, and a slow but safe convalescence to set in."

Dr. W. T. Taylor writes: "With regard to pneumonia, if called early, and there was a full pulse to warrant it, free depletion by the lancet was ordered; if the patient could not bear the bleeding, cups were applied to the chest in front or between the shoulders. In young children I preferred leeches. A mercurial purge was administered, followed by a diaphoretic mixture containing the citrate of potash, with just enough tart. antim. to keep up nausea. When the violent symptoms had subsided, I gave small doses of calom., ipecac., and opii. If pain existed in the chest, accompanied by a short dry cough, I applied a blister, and ordered an expectorant and anodyne mixture, which generally completed the cure. I lost two out of fifteen cases."

Bronchitis.—Of bronchial inflammation, there have been 233 deaths recorded during the year. Of these, 167 or 71 per cent. were cases of infantile bronchitis previous to the fifth year of life.

Dr. Nebinger writes: "The cases of bronchitis treated by me have been in general quite amenable to treatment, yielding in children in most instances to a combination of calom., ipecac., and potas. nitr., when the inflammation has been exalted and the cough frequent, dry, and painful. In mild cases, I have seldom found it necessary to use any other treatment than a mixture of syr. ipecac. and citr. potas. It has only been in a very few cases of infantile bronchitis that I have had occasion to resort to leeches, depletion by other means, or to blisters."

Dysentery.—This disease, usually so prevalent in our city during the summer and autumnal months, did not prevail in an epidemic form in 1855. Two hundred and sixty-six deaths, less by 180, or 25.28 per cent. than in 1854, are recorded from dysentery, of which number 184, about 70 per cent., were in the third quarter of the year. The writer saw but few cases, all of which yielded to a mild treatment.

Dr. Pugh refers to dysentery in his answer to the committee's circular, and says it has been prevalent in his neighborhood, along the Schuylkill. Of the treatment, he writes: "After the inflammatory action has been subdued by leeches to the abdomen, and sometimes to the verge of the anus, I have found advantage from sp. tereb., with ol. ricini in g. arabic mucilage; lunar caustic, pulv. ipecac. comp. and hyd. chlorid. mit., and enemas of sp. turpentine, tr. opii, and slippery-elm mucilage, fifteen or twenty drops of the former articles to about half a gill of the latter three times a day for an adult."

In diarrhœa, he says: "In the first instance, I administered gentle purgatives, as castor oil, sweet oil, syrup rhubarb arom., followed by astringents, as liq. ferri nitratis, tinct. catechu, rhatany, &c."

Dr. Atkinson speaks favorably of the use of "Hope's Mixture" in dysentery.

During the summer, Dr. Zorns, of the 11th ward, "saw quite a number of cases of dysentery, diarrhœa, and cholera morbus. My dysentery cases generally yielded after a few days' mild treatment with the oleaginous mixture, followed by small doses of calomel, opii, and ipecac. I allowed the free use of ice water throughout the disease."

Dr. Nebinger informs us, that "the dysentery and diarrhœa cases I treated were of a bilious type. The diarrhœa was similar to that which prevailed in 1849, when cholera asphyxia was epidemic with us. The discharges were very frequent, aqueous, copious, and exhausting, with but little pain. These cases of diarrhœa, as well as those of dysentery of a bilious type, I found to yield, with but few exceptions, to calomel or blue pill, opium, and acetate of lead, the recumbent position, and a plain farinaceous diet."

Cholera.—Compared with the amount of this disease in 1854, our city has been signally exempted from its ravages during the year. According to the record, there have been two deaths from cholera asphyxia, thirty-one from cholera, and twenty-nine from cholera morbus; in all, only sixty-two. In 1854, there were 600 deaths from cholera asphyxia, and 125 from cholera morbus. We know of very few physicians who saw cholera asphyxia during the season.

Dr. Nebinger, who resides in the 2d ward, seems to have fallen into a cholera atmosphere, for he tells the committee that he treated, "during the summer, eleven cases of cholera asphyxia; of these, all, in whom there was no evidence of collapse, recovered with one exception; while those who had passed into a partial or complete collapse died. I have never been able to promote the recovery of a cholera patient, after the stage of collapse had been ushered in. In the treatment of cholera, calomel is my sheet-anchor. I give it in two-grain doses, combined

with three grains of acetate of lead, made into pills; of these, I direct one every hour, until vomiting is controlled, and the evacuations from the bowels become less frequent, and furnish the presence of bile, when I diminish the dose, but continue its use until convalescence dawns. Externally, I direct the use of spirits of turpentine, to be applied over the surface of the body every half hour. To quiet the almost unceasing demands of the patient for water, I give portions of ice. I would here observe, that in 1849, 1850, and 1855, I have, on many occasions, given to the amount of from 60 to 90 grains of calomel to a cholera patient, without producing ptyalism."

Cholera Infantum.—This prevalent and peculiar affection of children in all our large cities, during the summer months, made its annual appearance about the middle of June. As usual, it was found among the children of that class of the population, residing in the densely populated and illy-ventilated portions of our city. But not exclusively. Many children who had the advantages of better food, and reside in our more airy streets, were by no means exempted. Being a disease of infancy, it prevails very generally during the process of dentition, which acts as an exciting cause, while it is aggravated by the direct influence of a high degree of temperature and an impure atmosphere.

Those children, therefore, who are exposed to the poisoned atmosphere of our crowded streets, courts, and alleys, in hot weather, and who are fed with an impoverished diet, possess a greater amount of nervous irritability and relaxation, and, consequently, are the most liable to the disease; when attacked, their cases, in a large majority of instances, prove fatal. But those children who enjoy the advantages of purer air, and more nourishing food, are more likely to escape death.

Our want of a registration act, deprives us of the opportunity of knowing, what proportion of deaths from cholera infantum are among the poor, living in densely inhabited districts. A large proportion no doubt; yet it would serve a useful purpose if we could determine correctly the statistics on this point.

We know, however, that during the year, 566 children perished from cholera infantum, which was a less number by 12.85 per cent. than for 1854, but greater by 17.11 per cent. than the average for three preceding years.

According to a calculation, made by Dr. D. F. Condie, of the deaths in this city from this fatal disease of infancy, from 1825 to 1839, inclusive, they amounted to 33.52, nearly 10 per cent. of the whole number of the deaths under five years during that period, and 4.5 per cent. of the entire mortality.

We have made a similar calculation for the next succeeding fifteen

years from 1840 to 1854 inclusive, with the following results. The deaths from cholera infantum amounted to 57.12, equal to 10.09 per cent. of the deaths under five years, and 5.01 per cent. of the entire mortality.

If these statistics can be depended upon, the deaths from cholera infantum for the latter period, have rather increased than diminished, notwithstanding the many facilities the children of our citizens enjoy, for pure air and recreation, and the improved sanitary condition of the city.

. In the treatment of this fatal disease among the children of large cities, and especially those children who live in densely crowded districts, we are sure that a hygienic plan will be preferred to all others, as the most successful. Those who depend on medication alone, without a change of air or location, will fail in a large majority of their cases, to subdue the disease and restore the little sufferers to health. While the writer would by no means neglect the faithful and persevering administration of astringents, sedatives and alteratives, with a careful adherence to a mild farinaceous and nutritious diet; he would consider his treatment as only half accomplished, without a change of air. If it be only occasionally, from the impure atmosphere of our confined city, to that health-giving and invigorating air of the country, which the poorest can secure, through the many facilities we possess by omnibuses, locomotives and steamboats, for short and pleasant rural excursions, it must prove highly beneficial.

One word more. In concluding this report, the writer would seriously and impressively direct the attention of the County Society, and through it the State organization, to the careful examination of two cardinal principles, deeply interwoven with the prosperity of our institution, and the sanitary requirements of every community in our State. 1st. An efficient arrangement for securing the medical topography of each county, the prevailing diseases and the most successful modes of treatment, in accordance with the report adopted last year at Hollidaysburg. 2d. A complete system of registration of births, marriages and deaths, in order to obtain and preserve the vital statistics of our commonwealth.

It will be evident to all, who have given any attention to the subject, that the present plan for obtaining the desired information of our medical brethren, does not succeed. Out of more than two hundred circulars addressed to members of the County Society, and a few others, only fourteen have responded. Of this limited number, three desired to be excused from replying, leaving eleven to forward their contributions, one of whom was not a member of the body.

The adoption by legislative enactment of a well organized registration system of births, marriages and deaths, that shall not only meet

the sanitary wants of every intelligent community; but one that will receive the entire approval and the willing co-operation of every member in our profession, is as necessary as it would be useful. A system, which shall be sufficiently comprehensive to embrace the wide domain of vital statistics, while its usefulness as a general sanitary reform measure, for the promotion of health and the prolongation of life, will be too clear to admit of cavil.

WILSON JEWELL,
Chairman.

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